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ABSTRACT

This publication presents the proceedings of a symposium that brought together the people who create the agenda for higher education with the aim of determining the financial and managerial direction of colleges and universities into the 1990s. General topics covered are the following: (1) financial challenges facing higher education; (2) financing higher education in the 1990s; (3) tuition pricing; (4) current research on reducing institutional cost structures; (5) financial implications of demographic trends; (6) prognosis for federal financing of higher education; and (7) productivity. Specific papers cover the subjects of tuition discounting, college quality and tuition, level of family willingness to pay for tuition, cost reduction trends and student employment, demographic and work force trends and their impact on higher education in the 1990s, and an examination of the causes and cures of cost escalation in college and university administrative and support services. Brief biographies of participants are included. (GLR)

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Foreword

This publication is an edited version of the proceedings of the National Symposium on Strategic Higher Education Finance & Management Issues in the 1990s, held February 24-25, 1991, in Washington, D.C. The invitational symposium was sponsored by the National Association of College and University Business Officers, the U.S. Department of Education's Office of Educational Research and Improvement, and The College Board.

The symposium brought together the people who create the agenda for higher education: institutional presidents and presidential policy makers, corporate leaders and leading financiers, top administrators from campuses and the government, well-known politicians, and widely respected researchers. The purpose of this meeting was to determine the financial and managerial direction of colleges and universities into the 1990s. The range of issues discussed was necessarily broad. It is hoped that the spirit of this inaugural symposium will continue in the form of a biannual series of conferences on specific topics affecting the higher education arena.

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Financial Challenges Facing Higher Education

Introduction to the Symposium

Caspa L. Harris, Jr.
National Association of College and University Business Officers

The winds of change are blowing at gale force in higher education. Events that once took decades to unfold now sweep by within years and even months. Individually, these events seem like unrelated strands in a tangle of chaos, but when woven together and seen as a whole, they form a tapestry of a new demographic and economic landscape for higher education.

The environment in which American higher education operates has undergone profound change. The essence of that change can be distilled down to one word: competition. Major research universities that once enjoyed an easy command of the national markets for high-quality students, faculty, and research contracts now find themselves engaged in a raging battle to maintain their competitive position within the industry, while smaller, regional colleges are fighting to ensure their very survival.

In the community college sector, however, changing demographics and increased demand for low-cost college prep and vocational programs have swollen the supply of applicants. Meeting this increasing demand for college preparation, vocational, and special assistance programs has severely strained community college budgets, budgets that are already over-extended by the political demands for continuing low tuition and by financially hard-pressed state and local government.

In this new environment, many college and university managers have come to realize that their institutions must make radical changes in the way they operate. Today's intense national competition for resources has generated considerable uncertainty for institutions in virtually every sector of higher education. Increased competition demands a rapid response to initiatives by other institutions and unconventional education providers. It also calls for continuous improvement in the quality and productivity of an institution's education distribution network and administrative support structure to enable it to effectively control costs, while enhancing services. The 1990s will require a flexible and adaptive organization, as well as a different pattern of work behavior. Faculty and staff must recognize what their students want and their competitors offer. Our lumbering institutional governing process must take this knowledge and translate it into action, making improvements in programs, service, quality, and cost at all levels.

At the same time, higher education markets, programs, and technologies are changing too quickly for top management to keep abreast of all of the latest developments. Slowly, we are becoming aware that it is impossible to respond rapidly to the simultaneous demands for lower cost and higher quality without radically improving coordination and teamwork.

Managing organizational change is a topic that higher education *must* examine and

understand. Fundamental change will be the order of the day for our industry in the foreseeable future. Clearly, those institutions that can adapt quickly and effectively to change will have a powerful competitive advantage during the coming decade. What is less obvious is where and how change should begin.

Institutions are faced with at least four options: one, create programs that meet market demands and divest those programs that do not; two, eliminate excess costs and enhance productivity in both academic and administrative functions; three, revitalize faculty and staff performance through the use of quality management programs, task realignments, and the creation of an institutional climate in which short-term demands for cost reduction are balanced by long-term investment in human resources; and, four, manage capital and financial assets and liabilities in an effective manner.

NACUBO, through its Financial Management Committee and Center, is committed to providing tools, strategies, and insights that will help institutional managers understand and address the financial and managerial challenges of the 1990s. With this objective in mind and with the assistance of the Department of Education and The College Board, we have organized this symposium. It will be only the first of many initiatives that NACUBO will undertake over the next three years to expand the literature and to extend the state-of-the-art in college and university finance and management.

It is now my distinct pleasure to introduce Mr. Michael H. Walsh, chairman and chief executive officer of the Union Pacific Railroad. I can think of no one more suitable to lead off our program than Mr. Walsh, who currently serves on the board of trustees at Stanford University and the board of directors at Creighton University.

Mr. Walsh has headed Union Pacific since October 1986. He received his bachelor's degree in economics from Stanford University in 1964 and an LL.B. from Yale University Law School in 1969. Between college and law school, he was a member of the first group of White House Fellows. In that capacity, he was special assistant to Secretary of Agriculture Orville Freeman.

Mr. Walsh practiced law in various public and private capacities before being named U.S. Attorney for the Southern District of California in 1977. In 1980, he joined Cummings Engine Company in Columbus, Indiana, as a member of the board of directors and executive vice president and general manager, Worldwide Engine and Components Businesses.

Mr. Walsh is the director of FirsTier Financial, a multibank holding company based in Omaha, of Flemming Companies, a wholesale food distributor headquartered in Oklahoma City. He is also a trustee and director of a host of other organizations, which, if I mentioned them all, would occupy most of the evening!

Ladies and gentlemen, please join me in welcoming Mr. Walsh.

A World of Change: Applicability of Business Practices to Higher Education

Michael H. Walsh
Union Pacific Railroad Company

Every time I get up to give a speech—and frankly, I give quite a few—I wonder how many people are going to show up to listen. Not long ago, I heard about a speaker who arrived, after arduous preparation on the speaker's part, to find only a single person in the audience. Anticipating that more people would drift in, he went ahead and started to speak. Soon, though, he gave up because his one-person audience was reading a newspaper. Looking at the guy squarely in the eye, the speaker said: "Look, this is kind of silly. Why don't I just give you a copy of my speech and we can both go home?" No. The man wouldn't have any part of it. He shook his head and demanded that the speaker continue.

"Why are you doing this to me?" the speaker said. "Why force me to go on when you are the only person here?" The one man in the audience looked up and he said, "Because I am the next speaker."

[Laughter.]

Now, happily, I don't have that problem this evening. Rather than me worrying about how many of you would be here, I expect many of you are asking why am I here. What is the chairman of a railroad doing as the keynote speaker for the National Symposium on Strategic Higher Education Finance and Management Issues in the 1990s? What do I have to say?

I hope the answer is plenty. Let's face it, each of us is tempted to think that there is something both special and unique about our own institutional circumstances. In my view, this view is especially virulent in higher education. I can't tell you how many times in almost 20 years total as a trustee of various educational institutions I have heard the words: "But you don't understand. We are talking about a university here."

The implied but unstated premise behind such statements is almost one of a ritual order in which only the initiated are trusted. In today's world, there isn't any place for such parochialism. Let me make myself absolutely clear. I am not saying that universities can be run just like a business. I *am* saying, however, that how a leader effectively manages change and how a leader effectively manages change in all large entrenched institutions have a lot in common.

Sure, businesses have a bottom line and they can and do measure profit. Universities don't and can't. That, however, is the beginning and not the end of

wisdom. To focus too much attention on old bromides frequently obscures rather than enhances understanding. When you talk about leading and managing the change process, all at-risk institutions share more in common than is commonly realized. By "at-risk" institutions, I am talking about institutions that face continued and rapid change and tend to be entrenched in their own ways. This includes businesses, universities, philanthropic and government agencies, just about all of today's institutions.

I want to emphasize at the outset that my perspective on this subject is not philosophical or academic. It is practical. I have seen the proverbial screw turn from the perspective of a corporate executive, a university trustee, a government official, and one who has sat on more boards and been involved with more organizations than I care to remember.

In my view, all of our institutions are dealing with only one constant and that constant is change. The security blanket, the predictability of the past, is gone. Leaders must now deal with an incredible number of economic, political, human, technical, and social factors and deal with them in a balanced way in running their institutions.

The bottom line, though, was put pretty clearly by Jack Welch, the chairman of General Electric: "Control your own destiny or someone else will." In 1991, that is just as true for Stanford University as it is for Union Pacific. Let me begin with a little bit of perspective.

Tom Peters, the author of *In Search of Excellence* and *Thriving on Chaos*, argues that any dummy could have successfully run a Fortune 500 company during the 1950s and the 1960s. While not endearing himself to the CEOs of that era, Peters tends to highlight the changes that effective leaders of American business are facing today.

American industry no longer stands on challenge. The combination of parochialism and self-satisfaction, which was prevalent for far too many years, is melting away quickly in the heat of global competition. Business as usual not only doesn't work, it is often fatal.

Let me give you a couple of examples from my own experience. In 1979, one of the historically great companies of America, a company you all read about in civics textbooks when you were kids, International Harvester, reported record earnings. A few short years later, however, Harvester was on the edge of bankruptcy.

Or take Caterpillar Tractor, the world's largest construction and equipment company, a company that never reported a single quarter that wasn't up from the Depression through the end of 1979, but that has had very few "up" quarters since then. Or I could mention German cameras and great companies like Ziess Zycon. Any of you remember Ziess? It made the best cameras and lenses in the world. But the Japanese, by combining low cost with high quality, wiped it off the face of the earth.

There are other examples too numerous to mention. We could talk about banking or the service industry, high tech, you name it. But for all the losers, we sometimes forget there are also winners. For every International Harvester, there is a John Deere. Despite Japanese dominance in many fields, I would ask you how many of you have

Japanese appliances in your kitchen or how many of you buy Japanese washing machines or dryers. There are no Japanese diesel engines in any heavy-duty trucks in this country.

So what is the point? What does all this have to do with what we are here to talk about? The answer, in a word, is everything. At least as I see it, it is time for a wake-up call for everyone in higher education.

You have probably read about the various steps taken at Stanford to try to respond effectively to the new world that is developing out there. The November and December 1990 issue of *Change* magazine details the Union Pacific's role in Stanford's efforts. While I am less personally familiar with Yale, I read recently that Dan O. Schmitt ordered all of his schools and departments to trim their budgets by 5 to 10 percent next year. As Schmitt put it, "For many years, Yale has been consuming its capital resources to live beyond its means." Unfortunately, my instincts are that the dynamics that drive the Stanford and the Yale situations are widespread. Equally, my own experience tells me that, while a lot of the right moves are being made, neither Stanford nor any of its sister institutions are fully on top of the situation.

Like bananas, major problems seem to come in bunches. When the world starts to catch up with you, it does so in a hurry and responding effectively not only taxes your financial energies, but more importantly, your managerial resources.

Let me take a minute to talk about Union Pacific, what I have learned there, and, combined with my other experiences, what I have concluded this means in terms of managing the change process.

At Union Pacific, I spent my first four months listening to anyone who was willing to talk. I talked to executives, union leaders, shippers, the guys who run the trains and maintain the track, everyone. I kept hearing the same thing over and over. The company was too big and bureaucratic. It took forever to get a decision. Our processes were suffocating. We were our own worst enemy. But if you listened, people didn't just complain, they explained. They knew what the problem was: a rigid, militaristic structure that had been in place for a century just wasn't working. Everything was functional. It came up through channels, got decided at the top, and went back down, again, through channels.

Now, the people at the top definitely knew what to do. They were smart and experienced and, frankly, much more knowledgeable about the railroad than I will ever be. They weren't the problem. The process was. It took too long. People weren't involved. It only tended to come together at one point, at the top.

In the meantime, though, the world and the customers moved on. What I heard in hundreds of hours of conversations boiled down to some pretty simple principles that I believe have wide applicability.

Number one, focus on the things that matter: the customer and the competition and not the politics and the internal lines of authority.

Two, push responsibility down. Get people to work together at the level where it

practically counts.

Three, communicate. Talk straight and openly and let people know what is going on and why.

Finally, focus on getting it done, on results—not just financial results but managerial results as well.

Translating these four principles into action required an enormous amount of effort and a great deal of change. Tom Peters has closely analyzed what we have done at Union Pacific. In his mind, the key is that we were willing to face up to our structural problems in the beginning and all at once.

Frankly, this meant dismantling much of the centuries' old structure that stood between me and what I call the first-line supervisor. In a three-month period in late 1987, we eliminated six layers of management and 800 people. With fewer people to give orders to or to review somebody else's work, we simply got to the point a lot faster. Our objective was to reduce not only the scaffolding but also the safety nets, to place accountability and responsibility as close to the action as we could. That is the first parallel. Whether you are in a business or in a university, the organization frequently conspires to defeat you. It wears you out or it waits you out or both. You have to find a way not only to eliminate the structural baggage of the past, but also and equally important, to fashion a new structure that actually works.

The second parallel is that people resist change of this magnitude. Everybody knows that. Some of the resistance arises because people feel threatened, but much of the resistance results from the fact that people don't know what the devil is going on, what the plan is, and why they should have confidence in it. And no one works very hard to explain that to them.

So, a key part of any effective changed management strategy is an institution-wide communication program. Whatever time you think such efforts will take, my advice is that you double it and you will still find yourself falling far short of the mark. In 1987, we launched a company-wide communication program, which continues to take at least one-fifth of my time every day and every week.

We started at the top with formal leadership and planning conferences for our senior 250 people. The point here is obvious: to get agreement on what we are going to do and why. Obviously, this requires that the leadership has a clear idea of the organization's mission and has faced up to at least the basic strategic choices and can explain those choices and that mission in simple English. This is followed by town hall meetings all across the system, meetings in shops and union halls, which I attend and at which I lay out to our employees where we are going, why, what kinds of pain will be involved, and what the prospects and the payoffs are.

The story has to be real, direct, and visceral. Slick PR not only doesn't work, it counts against you. The communications have to do far more than transmit information. They have to build confidence—confidence and trust based on candor. Frankly, the CEO has to be willing to expose himself or herself to be both visible and, most importantly, vulnerable.

The kind of communication I am talking about has to focus on a core message that people can understand, accept, and relate to, even if they don't like it or disagree with it.

In our case, I can summarize that message in what Peter Lynch describes as the proverbial 60 seconds. Look at your watch. In our case, I explained why we had to change; namely, that we had been deregulated and had no choice. As well, I acknowledged that technology would continue to reduce our need for people. I told everybody that we couldn't guarantee them employment and that their only protection was to be competitive in the marketplace. Finally, I argued that improved financial results—profits, which I was driving hard—are just as much in the employees' as the shareholders' interests because they provide capital, which in turn fuels growth, which provides jobs, and job security is the single most important thing to our people. A message that is any less direct and we are just kidding ourselves.

How many seconds did I take?

Now, that may seem like a very simple message. It is. That is the point. In one way or another, we repeated the message over and over again. It didn't make the bad news go away. We still reduced our work force by 25 percent in the course of four years, but it gave us a more positive way of explaining ourselves. We were doing what we had to do. We were doing what had to be done. We were doing what was in the best long-term interest of the majority of our people.

This approach has worked. We put together a string of 21 quarters of record year-over-year earnings increases, and I was pleased last year when Tom Peters picked us as the corporate turnaround of the year.

At least in my judgment, the parallel from what I have said to major universities is clear. Everyone on campus has to understand the core message. Tuition cannot continue to go up indefinitely at a rate that substantially exceeds inflation. Indirect cost recovery, no matter how justified, simply cannot increase in the future at the rate it has increased in the past. Investment returns that exceed the long-term average won't go on indefinitely either. And, finally, painful though it is, there is a limit to the generosity of donors who are willing to bail us out.

These realities, the facts of life, are inescapable. They can and must be explained and their implications can and must be dealt with.

To repeat what Jack Welch said, either you control your destiny or somebody else will.

I am also reminded of a comment by Peter Drucker: "In about five years there will be just two types of CEOs, those who think globally and those who are unemployed." I would amend that statement to say, "those who can manage rapid change and those who are unemployed," and I would include university presidents in the CEO group.

There are several other tools and approaches that are equally applicable in a university setting. One is despite the fact that universities don't have a bottom line in a traditional sense, they do have customers. On the academic side, the customer is

clearly the student or, for that matter, the parents. They pay the bills. There are other customers as well: government agencies, the faculties of schools, and departments. In a well-run business, the bottom line is that the customer must come first. Figuring out just what this means in the particular context of a university and its customers tends to clarify both priorities and relationships.

A second tool that has some applicability is quality processes or management on the basis of statistically based data. There is great leverage in reducing the emotionalism in decision making by focusing on accurate data and employing problem-solving processes. While I don't believe that quality processes are entirely applicable to the business side of a university, there is no reason—I repeat no reason—why accounting systems, information systems, on-line budgeting systems, people processes, management reviews, and so on cannot be used just as effectively in a university as they are in a business. The cost of failure far exceeds the cost of prevention and the hidden organization that exists to fix things when they fail is huge.

A third important tool is measurement. If I have learned anything, it is that you manage better what you measure better. Accurate data, of course, is a key underpinning of the quality processes I just mentioned. There is clear applicability of this principle to the administrative side of universities. My hunch is there is applicability on the academic side as well.

Surveys and focus groups and the willingness to face facts are all very useful tools.

Now, let me talk for a moment about culture and leadership in a university. Many, perhaps most, academics, I am afraid, are suspicious of anything that smacks of management or administration. It is somehow viewed as beneath them; worse yet, contemptible. In my judgment, this issue has to be dealt with head on and from the top.

The logic in my mind is compelling. If we spend $300 a square foot to build laboratories, which, using more efficient processes could be built for $150 a square foot, then we only have half the laboratory space we otherwise should have, producing half the research that might otherwise cure disease or aid a technological breakthrough or whatever. The academic mission is thereby compromised. If we fail to achieve these efficiencies because of the ego of a particular faculty member or our unwillingness or inability to manage the process effectively, then we are surely just as guilty of selfishness or incompetence or both as one would be in any other setting.

The fact that such behavior takes place in a university does not change its essential character. Equally, if our accounting systems are not up to the task, there is simply hell to pay with the federal government. Untold management and other costs are involved that would have been better spent putting fully adequate systems in place initially. That is the essence of the quality movement. Prevention costs are cheaper than failure costs, to say nothing of the loss of public confidence, which a few innocent, but ill-timed, missteps involve. We are learning these lessons the hard way at Stanford right now.

Finally, there is no reason why universities can't be innovative and entrepreneurial in terms of how they do their work. This is true of organization and management issues, as well as numerous other areas. Think about it for a minute. Industrial organizations have been forced to turn things upside down and to look at problems in completely different ways. For example, what is "true" today in manufacturing was absolute heresy only a decade ago. Production for inventory has been replaced by "just in time."

Equally, much of what we thought we knew about quality has turned out to be wrong, dead wrong. Only a few years ago, those of us in the Western world were convinced that there was a break point. Today we recognize six sigma quality levels. Virtually defect-free production doesn't cost, it pays.

Universities have to ask themselves equally fundamental questions. Just as the concept of partnership in a law firm or an accounting firm no longer guarantees either position or perquisites for life, don't universities have to reexamine the assumptions underlying tenure? Just as businesses join together in joint ventures of all sorts, don't universities have to aggressively examine the full range of areas in which cooperation might produce more effective results, more effective ways of operating?

I fear at this point I am running the risk of sounding like someone who says you can run a university like you run a business. To repeat, I am not saying that. I am saying that the tools and processes to effect the change process are similar on both sides of the street.

I started saying many of these things at Stanford more than a decade ago. Initially, I had a tough go getting any kind of a hearing. As an economist, though, Jim Ross understood much of what I was saying. But even when he and Bill Massy and Tim Warner and others began to take the initiative, much of the university community did not respond until there was a perceived crisis: in Stanford's case, the earthquake of 1989. How angry a particular trustee might be was never perceived to be a crisis.

Now, why did I begin to get concerned seven or eight years ago? First of all, based on my experience in the industrial world, I saw how unprepared most American businesses were for the changes brought on by globalism. Those changes hit the Rust Belt first and hardest and I was a part of them.

At Stanford, I didn't sense much appreciation, either by university leaders or Silicon Valley business leaders, as to just how fast and fundamentally those kinds of changes can occur. Indeed, the unstated assumption appeared to be that our success somehow immunized us from such unpleasantness.

Secondly, when I first became chairman of the budget committee of the board, I found my committee recommending—and I want you to listen to this carefully—recommending annual tuition increases, the amount of which—the increase alone—exceeded the yearly tuition I had paid when I was a freshman at Stanford in 1960. Now, as a kid who worked his own way through school, believe me, this caught my attention.

At the same time, the university was convinced that it could continue with cost

plus pricing indefinitely; much like we at Union Pacific, the university looked at the rate of inflation and then added a couple of points for what are called—and I think this is the euphemism—consolidations and improvements. And, bam, you had 7, 8, or 9 percent price hikes compounded each year. We cried for that in the industrial world.

Now, there were logical arguments to support this. The market basket of costs faced by the university were, indeed, heavily people oriented. We had, in fact, underrecovered inflation in the 1970s. Financial aid offset the full need of those who could not afford to pay. There weren't any obvious indicators of elasticity. Applications were, in fact, going up. End of the story, right?

Wrong. The problem was less internal and more external. Some of us saw that parents and students and the government weren't going to buy this kind of extrapolated inflation endlessly. Why not? They didn't perceive the value. They saw a lot of what they considered to be waste; the numbers themselves, looked at by practical people, were frightening.

What do I mean? As we approach the $10,000 a year mark for tuition alone at Stanford, I recognized that if we continued to inflate at the same rate, a mere 20 years from now tuition would be $100,000 a year. Meanwhile, I also saw indirect cost recovery rising to the point where it almost equaled tuition in its contribution to the operating budget. This in a university that, when I was there in the 1960s, prided itself on being "private." As a practical person, I asked myself if this could continue indefinitely, given the financial problems I saw on the horizon for the federal government and the somewhat elitist and privileged view that many held of so-called privately financed higher education.

Now, when you put all this together with the fact that returns on the endowment during the 1980s, by and large, were a couple of points above the long-term trend and add that we were all straining to raise more and more money, at least I felt that the storm signals were all blinking yellow, if not red.

This was especially true because the appetite for more buildings and more programs appeared to be unchecked. At Stanford, we were being urged to build a whole new science quad on the near west campus, which would push indirect costs up even faster and tax already strained financial and managerial resources.

It is in this environment that Jim Ross, Bill Massy, Tim Warner, Sue Schaffer, and their colleagues have been quite open-minded when it comes to the topic we are talking about tonight: the similarities between managing the change process in a well-run business and at a place like Stanford.

Despite the progress at Stanford, as I said earlier, I still have deep and genuine concerns, not only about Stanford but about higher education generally. I wonder if we have the breadth and depth of leadership across our institutions to deal with the range of problems I have outlined. And even if we have the leaders, I worry about whether we can enlist the followers; whether absent crisis, we have the skill and the will to mobilize an all too complacent academic community.

Related to all this, I worry about whether the means and the mechanisms employed within the university community are anywhere near equal to the task or if we all fall too easily into the shopworn explanations as to why universities are somehow different or unique. Equally, I worry about the willingness of university leaders to listen, or at least to hear if they do. The inclination to examine others' deficiencies is frequently stronger than the willingness to face up to one's own.

To wind up, the intellectual capital, the fundamental ways in which you think about leading, managing, and motivating is much the same in the university as in a well-run business. The tools and techniques of thinking are similar as well.

University leaders, all of us, have to disabuse ourselves of the notions that somehow universities are the only place in the world where politics are fierce, or that it is easy to fire or lay off people in a business environment, or that because we pay people more in business, motivation and morale are not problems, and on and on.

Everyone in the higher education community has to think about leading and managing their institutions as something more than a bother. Rather, it must be seen as a genuine challenge, a challenge in terms of orchestrating and integrating the efforts of a group of individuals who have an important common purpose and who behave in very human ways, which doesn't mean they are attractive ways.

Whether this is done well or poorly has enormous consequences for the enterprise. In thinking about all this, as I have said, you have to deal with the structure of the organization. You have to deal with the people who control the key pieces of the organization and you have to figure out a way to get them to buy in. You have to deal with the very real things, like budgeting processes and accurate data and HR systems and, of course, communications and politics.

Perhaps my most important point is that all this must be aggressively and consistently led. Enormous effort must be put into the task. None of this is self-executing. There is no room for the Teflon executive.

Lack of communication was behind the problems of a minister I heard about, who wanted his church's directors to approve the purchase of a chandelier. But each time the minister suggested it, his proposal was voted down. Even his loyal clerk, who had usually supported his proposals without fail, kept voting against the chandelier. "Why do you keep voting against buying a chandelier?" the minister asked the clerk. "There are three reasons," he replied. "First, I don't know how to spell it for the minutes. Second, we don't have anybody who can play one of those things. And, third, what we really need around here are some new lights."

[Laughter.]

Thank you very much. I hope I have shed some light on the subject of your conference. I will be glad to take a few questions.

Questions and Answers

FREDERICK FORD: Fred Ford, Purdue University.

We are all managing the business side of the house pretty well from a cost standpoint, but the big difficulty is the faculty side. When we are faced with faculty teaching loads of two courses one semester, one course another semester, and sometimes no teaching load at all for a semester, and faculty constitute the biggest cost component in the whole operation in an environment that doesn't pay any attention to cost competitiveness, we are all mystified as to how to challenge and manage the situation.

You have addressed the administrative side at Stanford, but I don't get the sense that you have really attacked and tried to get your arms around the academic side. I would be interested in your comments on that.

MR. WALSH: The question you have asked puts a finger on the most difficult problem. The remarks that I made about the need for continued leadership, the absence of Teflon executives, and the willingness to take the lead in the communications efforts and make yourself visible and vulnerable are all directed to that issue.

I do not believe that there is a reasonable prospect of mobilizing the academic side of the house in the absence of the kind of leadership I described. When I took on this job, people told me it was impossible, that Union Pacific had 11 national unions that couldn't be worked with, that it was a dinosaur of an industry . . . one could go through the whole list or parade of horribles.

I believe that is accurate in the absence of getting out in front of the curve in the way that we were talking about. I believe that the willingness to get out in front of that curve and articulate a logic that is correct, that relates to the facts and makes the person articulating the logic visible and vulnerable, works. It takes a while and it takes enormous energy because there are more groups and people who want to talk with you personally. It is a political act of leadership.

Ultimately, when you have worked at it as long as I have, you can retreat to video tapes once people have started to believe you, or you can retreat to satellite. When they don't believe you, they have to touch and feel and smell you. You have to call a spade a spade.

In my industry, we have had to say to rail workers, look, you are in the top 1 percent of all industrial workers in the United States. Cut the crap. Our single biggest challenge is to be competitive. People understand that kind of straight talk and they don't view it as being anti-union. And all the rumors about people trying to keep you from those kinds of communications, if there is a belief that you are genuine and sincere, they won't do it. They won't try to keep you from doing it.

I can't be more specific than that because I haven't tried to fashion a response. The

one thing I have learned is you start with a broad principle like that, which you have to believe is true, then you fashion the specifics and the details, and then you drive it home over 12, 18, 24 months.

In the case of higher education, the case is clear. Are there intelligent people who think that we can continue to raise tuition at three or four points above the CPI indefinitely? Are there people out there who are awake who think that the federal government is going to continue to increase its costs at the rate at which it has? Are there people out there who think that the long-term returns on endowment that were reflected in the 1980s are going to be characteristic over 30- and 40-year periods? They have to be idiots.

In my mind, it isn't a subtle message—the economic message is pretty clear. In the course of moving forward against those objectives, it doesn't gore everyone's ox equally, but that is just as true in a business setting as it would be in a university setting. That is where the intensity of the leadership and the management comes to bear.

Do you find that to be a persuasive answer?

T. EDWARD HOLLANDER: I don't and I would like to debate it with you.

MR. WALSH: Good.

DR. HOLLANDER: My name is Ted Hollander. I am just finishing 30 years of managing a billion-dollar budget in New Jersey and I am now a faculty member. That transition has been difficult for me from your perspective. The problem, and I think you alluded to it earlier, is that we do not have in place systems to give faculty incentives to conserve resources.

All of our systems at the university level are designed to help faculty members waste resources. Our faculty members who are intelligent respond to incentives by doing exactly what they think we want of them. One of the fundamental problems we need to deal with is how we can restructure, in the public sector (the private sector has dealt with that issue more than the public sector), our budgeting and financial management systems to give faculty members incentives to teach more, to be more productive, and to use resources in a way that, at the moment, they see as in their interest to waste.

MR. WALSH: What do you think I said that was inconsistent with that, if anything?

DR. HOLLANDER: I don't think it is only a leadership problem at the management level. It is a problem that strikes the departmental level. Unless we restructure our

system to decentralize responsibility, as you do in your corporation, we are not going to give faculty members the incentives to begin to manage their own time and to manage their own work effectively.

MR. WALSH: I agree with you, but . . .

DR. HOLLANDER: We don't disagree. The problem is where do you start and . . .

MR. WALSH: We are here to talk about the parallels, if any, between industrial experiences and university experiences.

DR. HOLLANDER: Oh, I think the parallels are very significant.

MR. WALSH: I will be perfectly frank. When I came into the Union Pacific in 1986, all the incentives were exactly as you describe. We used what is called a "Haye Point System," which was totally bastardized over the course of the years. The incentives were for more employees. In other words, you exaggerated job descriptions based on larger numbers of employees and more apparent responsibility and all the typical baloney. That was in the bloodstream and that drove larger offices, larger numbers of Haye points, and higher rewards and incentives.

Those things are pretty close to home. They hit the paycheck and they hit the perks, which are what people fundamentally and emotionally care about. But as the chairman of the place, I had to say to everybody, look, let's describe the situation accurately. We want to take the company in this direction, become more down-sized, become more efficient, drive responsibility down, and drive our incentives in exactly the opposite direction.

So, what are we going to do? We are going to change the incentives and you don't want us to. In a sense you want the company to become more efficient but you don't want it to become more efficient at your cost. Let's not kid each other that this isn't going to be a conflict-ridden exercise, but we are going to do it and we are going to involve you in doing it.

The first thing we did was to freeze everyone's salary, including mine. You couldn't do that for the work force, so, obviously you had an equity problem, but you said tough; you have to get going somewhere.

We did that for a year. During that period of time we put together processes that were representative, in which we said where do we want to go from here? We worked out a completely different set of arrangements that gave incentives for the sort of behavior we wanted.

DR. HOLLANDER: Have you done that at Stanford?

MR. WALSH: No. Well, I had better not answer that so quickly. It involves a major leadership effort; when you look down that gun barrel and say, look, we are going to call a spade a spade. The systems don't create incentives for the behavior we want. People have a lot of self-interest in the systems. So they aren't willing to take on the conflict and, believe me, it leads to anger. That is an act of real leadership. In the absence of such an act of leadership coming from the top, the HR people can propose those changes until the cows come home, but they won't happen.

DR. HOLLANDER: I will buy that.

MR. WALSH: Fair enough? I don't think you and I are disagreeing about anything.

DR. HOLLANDER: No. I defer to Carol.

CAROL FRANCES: My name is Carol Frances of Carol Frances + Associates.

When I work with presidential-based organizations and trustee-based organizations, they blame the faculty for intransigence and unwillingness to increase their productivity. When I work with faculty groups, they blame the trustees and the presidents for not understanding what they are about. The faculty observe that the administrative employment increases in the last five or ten years have been three or four times the increases in the number of faculty. They see a vast expansion of the administrative layer.

MR. WALSH: Which is factually based. It is there.

DR. FRANCES: From your perspective as being both in business and in education, do you have any sense of an optimal balance between the management functions and the instructional functions within institutions and how far away we are from that optimal balance?

MR. WALSH: Well, the answer is "no." I am not here today as an expert in academic finance. I am here as a practical person, who has used a lot of caloric energy wrestling with these issues. I do have something I think is useful to say, even though I don't have a view on what the optimal balance is.

It comes back to the same theme that we were talking about a moment ago. There is absolutely nothing unusual in a large organizational setting of one group blaming the other for the nature of the problem and pointing to statistics that support the blame. That is evident in every large organization I am aware of.

When I came to Union Pacific, people who didn't like the fact that I was an outsider came in and said, "But he gets paid a million dollars a year." That is designed to create a certain amount of emotional resentment. Actually, it works quite effectively.

Everybody blames somebody else, right? It is very simple to do and you can create a target for that no matter which side you are on. It is the leader's job to address that issue, to say there is a case to be made as to why I get paid too much. There is a case to be made as to why unions are inefficient. There is a case to be made as to why we bought the wrong system. All of these have logical underpinnings or facts to support them. There is a case to be made for everything. The underlying fundamental issue is do we have the will to become competitive? This is in a business setting. In a university setting, do we have the will to carry out our mission, which presumably has been identified?

It is the leader's job to persuade the conflicting factions, to say the concerns that we share in common in pursuit of this objective or mission far outweigh the concerns over which we are picking away at each other. In the course of creating that higher sense of organizational or common purpose, effective leadership over a period of time can reduce the tendency for what I call the "who-shot-John syndrome." In the absence of that kind of an approach, and if you have a culture or an environment in which there is an unwillingness to address the issue that way, the "who-shot-John syndrome" will proliferate to the point that it is not manageable. In each one of the choices one makes there is a "who shot John" attitude because none of the decisions are clear more than 55 percent of the time. No matter who or where it is, there will always be a constituency for the other side of the coin.

If all you ever do is explain the other side of the coin, you will be blue in the face. Are you following me? When I go to these town hall meetings that I have talked about, I won't say I refuse to talk about local issues, but I say, look, as the chairman of a $5 billion company, I am not here to adjudicate a local labor dispute. I am here to help us identify our common purposes and the things that we share in common. Those far outweigh any individual disputes, which we will continue to have. It is in the nature of things. Human beings are prickly people and they will always want to fight about things at the margin. But, if in the course of allowing that to happen you lose sight of the larger purpose, as a result of which you become ungovernable, then that is a bad tradeoff.

In my mind, that is the answer to your question and many, many others—but coming behind that, you can't just lecture. You have to say, okay, if we have fundamental disincentives, we have to demonstrate to people that we will change those. Or if we have fundamental, structural problems we have to explain that to people in terms they find to be persuasive.

DR. FRANCES: You said you needed or it was helpful to have data. Do you have data that help identify the contribution to productivity, say, in a higher education setting of an administration function?

MR. WALSH: I don't, but if I ran one of those institutions, I would work to determine that in the same way that you do in a large business entity. You have all kinds of so-called staff enterprises that people at budget-cutting time want to argue are not productive. In fact, they are very, very productive and you shouldn't use the word "staff." They are an alternate line, but you need to be able to demonstrate that they, indeed, carry their weight. I just don't have sufficient experience in the university setting to do that, but it is a do-able job.

ROGER LOWE: I am Roger Lowe, Wichita State University, and I would like to come back to the academic side and the point that Fred Ford made a few minutes ago. First of all, let me say that I think you are right on target and we need to have more board members like you.

You mentioned the fact of readdressing the tenure situation. Is Stanford doing anything about that matter? And if not, are there any of the large institutions that are going to step to the microphone and take that issue on?

MR. WALSH: First, the answer to your question is, to the best of my knowledge, no. Second, they need to—"they" being the larger institutions you are talking about. Third, I will close with a comment that may shed light on that.

Trustees are not very powerful people. There is a view, certainly one I held before becoming a trustee, that trustees have all this power individually and collectively. The honest-to-God truth is the nature of the institution frequently creates such a balance of interests and inputs, and frequently the politics of the situation are such, that the two things combine to substantially constrain the exercise of that power or authority. That is exacerbated by all kinds of things.

People go on boards for different reasons. Some of them have a lot of money. Some have the capability to raise money. There are all kinds of requirements for diversity. So, in fact, orchestrating the means by which a board becomes an effective player, particularly when institutions are at crossroads like higher education is now, is, in my mind, a very complex topic. It happens to be one that I am very interested in and in which I guess I try to play a role, rather than theorize about.

But that topic is in some ways at the core of what we are talking about. Seizing the initiative and making the kind of fundamental change that we are talking about or working your way through it is not obviously and immediately in the self-interest of the temporary resident of a chancellor's, a president's, or a provost's chair. Yet, when circumstances are at a crossroads, that is the central role that a board has to play, and a board has to be smart enough to know which situation is which.

If my fundamental thesis that higher education is at a crossroads and these things are likely to go south rather than north is wrong, then you have a meddlesome board that is fooling around with what the administration ought to do. If it is correct, and in whatever institution—I am not now talking about Stanford—in whatever institution the issues don't appear to be being joined adequately, then you have a board that is doing its real job at a time of stress and crisis. The wisdom comes in figuring out which is which. That only relates to tenure in the sense that tenure is one of many difficult kinds of decisions.

Are you following me? If what I am saying is correct, and I would be very delighted if I was wrong, the real issues have to do with the capability of these behemoths to deal with their academic mission. One can only go so far purely on the business side—that is fundamentally what Stanford has done so far.

You say, if 60 percent of my cost structure is made up of people, 20 percent is made up of hardware, and 20 percent is made up of other stuff, and if the Japanese are 40 percent lower than I am in price, unless I deal with the people issue, I would have to get rid of everything else; no machinery, no factories, no trains, no communications, no businesses. Then what would I do? You would get to that point fairly quickly.

The problem that I see in higher education is there is not yet a consensus on whether or not this is a fundamental kind of a crossroads period, such as American industry started to face in the late 1970s and continues to face, high technology services and everybody else started to face in 1985, 1986, 1987. If it is such a period, then the issue I am talking about is a ripe issue.

I will wind up by saying I guess we do it because we believe that what these institutions do is important to society. My only message is that is not an excuse for doing it in a sloppy way. Allowing selfishness or sloppiness to govern compromises the academic mission; we are kidding ourselves if we somehow pretend that isn't so.

With that, thank you very much.

Symposium Overview

Jeffrey L. Gilmore
Office of Educational Research and Improvement
U. S. Department of Education

Thank you, Caspa. Good morning and welcome to the national symposium.

For the next few minutes I would like to give you a brief overview of the events leading up to this symposium, explain what we hope to achieve, and highlight some of the activities planned for the rest of the day.

The impetus for having this symposium originated some four years ago, when a colleague, friend, and former supervisor of mine, Sal Corrallo, first raised the idea of applying productivity concepts to higher education as a research priority within the Department of Education.

At that time, the issue of rapidly rising tuition rates and where all the money was going was being raised by then Secretary of Education Bennett and others. Sal had the foresight to recognize that the national debate over increased cost covered only one side of the issue. In order to know whether the money was being used wisely and effectively, the public needed to know the outputs of higher education, as well as the inputs, to know what they were getting for their money, as well as how much it cost.

Discussions within OERI (the Office of Educational Research and Improvement), together with reviews of the literature, quickly revealed to us the complexity of the problem. Not only were there multiple inputs into higher education, including personnel, money, time, equipment, facilities, and other resources, but there was no clear way of attributing any one input with any particular output.

In addition, the outputs themselves were a totally perplexing morass of student, faculty, and institutional outcomes and products, both direct and indirect, serving multiple constituencies and often conflicting goals and lacking any common agreement on what constituted or was meant by quality.

Rather than give up, OERI decided to sponsor a study group on productivity in May 1988, to help clarify the issues and identify some possible approaches to the problem of measuring productivity and higher education. Several of the 14 people at that meeting have joined us today, including Dick Anderson and Aims McGuinness. Welcome.

Up to and following that meeting, OERI embarked on a series of in-house studies and publications on higher education costs, student outcomes, and college quality. The OERI-funded National Center for Postsecondary Governance and Finance, directed by Dick Chait at the University of Maryland, also contributed to the exploration of important higher education finance issues through its Finance Forum,

headed by Dick Anderson; research projects on financial aid by Greg Jackson, Lee Hansen, and Jay Stanton; and the Center's 1988 National Invitational Conference on College Costs.

Congress recognized the importance of financial issues when it mandated that the Department of Education conduct a study of escalating costs of higher education. The final report to Congress was prepared for the Department's Office of Planning, Budget, and Evaluation by Rita Kirshstein and her colleagues at Pelavin Associates.

Further pursuit of these interests commenced this past December at the new OERI-funded National Center on Education, Finance, and Productivity, headed by Allan Odden, at the University of Southern California, and by Bill Massy, at Stanford, who has taken up the reins of the Finance Forum.

Leading up to this symposium and rounding out the other efforts, OERI also commissioned papers by Bill Massy and Jim Mingle on productivity and sponsored a series of studies through NACUBO on cost reduction efforts and student employment in higher education. Over a year ago, when Sal and I first began planning the project that would lead to this symposium, there were objectives we wished to accomplish.

We wanted a concerted effort to explain the costs, outcomes, and quality of the undergraduate educational experience. These issues were at the center of many of the calls for institutional accountability in higher education. However, we knew that this would not be easy. Even the House Subcommittee on Postsecondary Education, which in 1987 organized a hearing on college cost, had concluded, "the rising price of a college education is an issue that concerns us all; yet, because of the complexity involved, it is likely that no easy solution to the cost issue will be found."

One factor, however, seemed to be the key issue: the cost of quality. By studying effectiveness, efficiency, and productivity, we hope to have a better understanding of the cost structures and the educational processes of higher education in order to explain why college costs and tuition have increased; to help consumers and policy makers make better decisions about their educational expenditures and have a better sense of the return on their educational investments; to help institutional decision makers make the best of their available resources in the advancement of their stated missions; and to provide useful information for the reauthorization of the Higher Education Act.

And now here we are. Our cosponsors for this symposium, NACUBO and The College Board, have graciously and generously worked with us to bring together the most current research and the leading lights on the topic. But most importantly, our cosponsors have invited you, the collegiate financial officers, state and federal policy makers, researchers, corporate leaders, and association representatives, to explore the important issues collectively and to exchange the latest information.

It is my hope that today's activities will improve our understanding of the challenges before and our ability to surmount the strategic higher education finance and management issues facing us today. We are well on our way.

Last night's keynote address by Mike Walsh highlighted the lessons that colleges

and universities can learn from the business community. Today, immediately following these remarks, Dick Anderson will moderate a distinguished panel of corporate leaders and education policy makers. They will discuss financing higher education in the 1990s, respond to questions from the floor, and engage us in a stimulating dialogue of the issues.

Following the panel discussion, we will break into three concurrent sessions for current research and in-depth discussions on the pressing topics of tuition pricing, reducing institutional costs, and the financial implications of recent demographic trends.

We will then come back together for lunch and a keynote address by Senator James Jeffords on the financing of research, scientific instrumentation, and facilities -- most crucial issues today.

Following lunch, Bill Massy and Jim Mingle will present papers on productivity. Bill Massy will relate to us several exciting developments. He will tell us how some of the cost reduction strategies Michael Walsh developed at Union Pacific were translated into practice at Stanford. Bill will also review the results of his bibliographic inventory and institutional survey to give us a sense of what has been tried and what is happening, a sort of what works and what doesn't. And he will present the results of his research on the causes and cures of cost escalation.

Jim Mingle will then give us an informative look at the productivity issue from the state perspective. Jim will discuss the ways in which public policy, as expressed through the regulatory powers and finance systems of state government, influences the productivity of higher education. He will review the historical use of regulatory policies, suggest several new strategies for consideration, and ask whether productivity is a valid concept in higher education or a compatible objective in the political process of resource allocation at the state level.

Of course, we plan to allow ample time for questions and discussions at the end of each presentation and hope that you will take advantage of the opportunity to pursue these issues further in an open forum.

Closing out what will be an exciting day of discovery, Janet Hansen will lead us through a discussion of future directions, but I must express my own hopes that our consideration of these issues will not end at the conclusion of this symposium.

The full text of the papers that are presented, the panel discussions, and the keynote addresses will be compiled and published in an edited transcript of these proceedings for use by anyone concerned or involved with higher education finance and management issues. This symposium will not be the last word on college costs and quality, but, hopefully, the impetus for new approaches to the problem.

Thank you for coming. Now, let's get on with the real business at hand.

Financing Higher Education In the 1990s

A Panel Discussion

Moderator
Richard E. Anderson
Washington University

Panelists
George A. Brakeley, Jr.
Brakeley, John Price Jones Inc.

Patrick J. Hennigan
J. P. Morgan Securities Inc.

Richard T. Jerue
House Subcommittee on Labor-Management Relations

Charles E.M. Kolb
The White House

David A. Longanecker
Colorado Commission on Higher Education

Robert M. Rosenzweig
American Association of Universities

RICHARD ANDERSON: This is going to be a panel presentation, and I thought it would be useful to set a little context. Before coming East, I set aside the contracts and budget work that I was doing and went back to my book shelf and started looking through the list of titles and bibliographies on my shelf about higher education finance.

It is not a list of cheer and sunshine. If you go back to 1965, there was a crisis in college finance, followed by new solutions; in the early 1970s, many of you will remember the new depression in higher education. Moving on in the 1970s, there were varieties of financial crises, meeting the financial crises, managing faculty reduction, and strategies and procedures for solving fiscal and enrollment problems. Then in the early 1980s, faculty retrenchment, how many and how managed. Then there were the titles of alliteration, the three Rs of the 1980s: reduction, retrenchment, and reallocation, following shortly by deficits, declines, and dismissals; faculty tenure; and fiscal exigency.

Also on my shelf was a piece by Robert Hutchins entitled *Hard Times and Higher Learning*. That was published in 1933.

The persistent financial problem in higher education speaks as much to higher education's ambitions as to the state of its financial well-being. There never is and there never will be enough money for what we want to accomplish. When we secure more funding, we immediately expand the scope and/or the quality of the enterprise. We add more students, more research, and more service. So we are ever at the cusp of a revenue shortfall, which threatens the students we have just enrolled, the buildings we have just built, or the faculty we have just hired.

It is only in hindsight that we recognize good times and it is in hindsight that we look back on the 1980s with the knowledge that they were, indeed, good times. The revenue base for most institutions increased dramatically in real terms; that is, above inflation.

Will the problems of the 1990s be as severe as they seem in prospect? Well, we have a distinguished panel to help us sort through these issues and I have arranged their speaking order somewhat arbitrarily but, as I see it, in groups in distance from higher education.

We will start with government perspectives and move from Charles Kolb to Rick Jerue to Pat Hennigan in a view from Wall Street and the financial markets, then to George Brakeley in fund raising, and on to Bob Rosenzweig and Dave Longanecker, who come closer into the higher education camp and fold. Let me make a few remarks about each of the individuals.

Charles Kolb, to my left, is deputy assistant to the President for Domestic Policy. He has impressive credentials for helping us understand the federal perspective. He is an attorney by training. He has degrees in philosophy, politics, and economics. He perhaps could be somewhat better qualified for budget cutting had he done a residency in surgery, but in that regard, he was the deputy undersecretary for Planning, Budget, and Evaluation at the Department of Education.

To his left is Rick Jerue, the counsel to the Subcommittee on Labor-Management Relations of the Education and Labor Committee in the U.S. House of Representatives. Since 1988 he has been staff director to the House Subcommittee on Postsecondary Education. He has a long involvement with higher education. He was associate counsel to the Senate Subcommittee on the Education, Arts, and Humanities. From 1981 through 1983, he was staff director for the National Commission on Student Financial Aid. He also served as vice president for government relations at the American Association of State Colleges and Universities. Rick knows both sides of the higher education/government tension.

To the far left is Pat Hennigan. Pat is vice president for Public Finance and Investment Banking at J. P. Morgan Securities. He has been with J. P. Morgan since 1982, where he specializes in working with colleges and universities on their access to debt capacity and advising them on rating agency strategies. Prior to that, he was a professor at Cornell University. I have gotten to know Pat in my capacity as director of the Forum for Capital Finance and in his capacity as a valued adviser to Washington University. It is always a pleasure to work with Pat.

Immediately to my right is George Brakeley, founder and senior counsel of Brakeley, John Price Jones, which advises nonprofit organizations and colleges and universities on fund raising. George has been personally involved in helping many of the institutions that you would know by name raise funds for many years. He has also written a book, *Tested Ways to Successful Fund Raising.*

I have not been involved much in fund raising, so in preparing for this panel, I ran into Dave Blasingame, our vice chancellor for development, and said, Dave, I am on a panel with George Brakeley. Can you tell me anything about him? He said the only thing to tell you is that in higher education fund raising, George is the person to have. You couldn't have a better person to help you think through these issues.

In the middle to my right is Bob Rosenzweig, president of the Association of American Universities, a position that he has held since 1983. Before joining AAU, Bob was the vice president for public affairs at Stanford, a position I have to think had to have been at least somewhat easier in those days than it has been of recent times. Almost all of you know him, I am sure. There is probably no one more knowledgeable or insightful about the nexus between higher education and science policy and science funding than Bob.

To the far right, Dave Longanecker, executive director of the Colorado Commission on Higher Education. Dave is also president-elect of SHEEO, the State Higher Education Executive Officers association. He was executive director of the Minnesota Coordinating Board before moving to Colorado. Dave has had a long involvement with higher education and policy, particularly in the area of student aid. He has a unique and authoritative picture of both state funding and national student aid policies.

I am going to direct some questions to each of the panel members, and I would

like to have the audience, if you would, hold your questions until the end. We are going to go through these fairly quickly, so that there will be plenty of time for audience participation.

Student loan defaults have been very much in the news. My first question to Charles Kolb is what does the Bush Administration feel is the best way of addressing the student loan default problem?

CHARLES KOLB: Thank you very much.

I wish I could begin by explaining why I didn't go to medical school since there was a reference to budget cutting before, but maybe I will have a chance to get to that later.

The question has to do with student loan defaults, which is an excellent question. When I was at the Department of Education, I spent a considerable amount of time—pretty close to 50 percent of my time in the Office of Planning, Budget, and Evaluation—on postsecondary education matters. Right from the beginning, my first day on the job in September 1988, I spent a lot of time on the default issue.

Of course, at that point, one's attention was riveted by the situation on the West Coast, the united education and software complexities that came up. It is fair to say that was one of the first major shocks to the system in recent years and, of course, it was subsequently followed by the complications of last summer.

As to what one can do, I think the problems in this area are pretty obvious in terms of the shocks that the system has seen. The high cost of defaults is something we all know. It is pretty close to 50 percent of the funds that are budgeted for Stafford loans. The federal government and the Department of Education have taken a number of steps to tighten up the system; some of those steps have not met with resounding applause, but the Department of Education has also recently published a manual that includes recommendations as to what the participants in this series of complex programs can do to help get down defaults. We are now facing reauthorization, and one of the most important things that we can do to try and address defaults—it is not the only thing, but it is an important thing—is to look for ways to simplify some of the program structures.

I continued to hear at the Department of Education that these programs, while effective in terms of providing access to postsecondary education, are also extremely complex and often confusing to the people who have to administer them or to the people who are the intended beneficiaries of them: the students. Those of you who are players in the system can help all of us in terms of suggested changes that would streamline the structure, make it easier to administer, not only from Washington but also from the institutional perspective, and make these programs a little easier to understand from the perspective of consumers, make them a little more user friendly.

We can try and clean up after the elephant, so to speak, in terms of trying to recoup the money after it has been paid out or trying to recoup defaulted loans. In

terms of institutional quality and the overall quality of the system, we would be better off if we could address some of the structural problems we know are there that we think lead to higher defaults.

DR. ANDERSON: One of the issues that has come up is the possibility of colleges and universities playing a role as a source of capital. What is the current thinking about colleges and universities as a source of capital for student loans?

MR. KOLB: I am not sure that anyone has proposed that colleges and universities be a source of capital. If your question concerns a possible proposal for a direct loan program—is that what you are getting at?

DR. ANDERSON: Yes.

MR. KOLB: That is currently under review. I believe that the President's budget, which was released a couple of weeks ago, indicated that this proposal was under review and would be considered if it were deemed feasible. Of course, at this point, we are on the verge of having a new Secretary of Education, so it is fair to say that things are still at the under-review stage.

DR. ANDERSON: Okay. Many of us in higher education assert that there is a growing mismatch between the industry's current structure and its ability to finance the burdens that are placed upon it. The list includes educating more economically and educationally disadvantaged students, and dealing with the tens of thousands of displaced workers and the world competition that requires broader range and more sophisticated research.

What types of incentives can education realistically expect from the federal government to support these endeavors?

MR. KOLB: I am not sure how to answer that question. It is the wrong question. If you will permit me, I would like to answer a slightly different question.

I think the question is wrong because I don't think you should look just to the federal government for incentives. Postsecondary education has a very difficult but challenging mission. If you look at the K-12 system, and I am speaking very generally now, the goals or objectives of a K-12 system are fairly clearly spelled out. There is an end point, so to speak. Something will or won't happen to a student after the 12th grade.

But when you get to postsecondary education, it is open-ended. If K-12 prepares you for what comes next, for postsecondary education the "what comes next" is much harder to define. You have a whole range of choices, whether it be graduate work, going into the job market, or doing a host of other things.

So it makes it harder to answer that question. I do think, though, it is useful to try and answer that question in terms of asking what is the value added of the postsecondary education endeavor and whether this means that there should be goals for postsecondary education or for particular institutions. Rather than begin by asking what the federal incentives are, the most important thing for postsecondary education to do now is to define its own mission. And that mission is one that would change dramatically, given, as you point out in the question, the additional challenges that are placed upon all of us.

It is a much tougher challenge because of the fact that it is open-ended, but our postsecondary education system is the strongest in the world. That isn't to say it doesn't have problems, but when you look at the quality that is there, it is pretty good. There will certainly be some adjustments in the future, but it is a system that we can be proud of.

DR. ANDERSON: Given everyone's desire to cut administrative costs, how might the Administration propose to simplify what is often micromanagement, from student aid to animal care?

MR. KOLB: You mean, micromanagement by the federal government?

DR. ANDERSON: That is right.

MR. KOLB: Hadn't noticed.

Fortunately, I didn't have to do any of that when I was at the Education Department, but I understand what you are saying. There is a tradeoff here and perhaps you could help us reach it.

Maybe I am naive in saying I don't think the federal government wants to micromanage. What we would rather have is a system that is structurally sound, with good incentives for management and enhanced accountability in terms of the quality of the outcomes, and let the system sort of run itself with audits and other types of intervention where it is appropriate.

I understand what you are saying. If you look at the system now, its complexity almost invites micromanagement. Again, to go back to the point I made at the beginning, if we can find ways to simplify the structure, you will see a change in terms of that level of micromanagement.

DR. ANDERSON: One of the problems that higher education clearly faces right now is that there is an issue of credibility or competence. This question is in some ways more appropriate for some members of the panel than for others, but I am going to ask each member of the panel the same question. It is useful for us to hear a perspective of how higher education management is viewed, as we go back to our campuses or our policy making positions.

So, Charles, on a scale of 1 to 10, as candid as you can be, how does the Administration rate our management of American higher education?

MR. KOLB: I hate to be the first one to answer that question because I am not going to answer it. I don't feel that I am in a position to speak for the Administration. I just don't have an overall view. The people I know who do it, do it very well.

DR. ANDERSON: Okay. Let me ask Rick straight out, how would the legislature and staff answer such a question?

RICHARD JERUE: Well, judging from the last couple of years of legislative activity, probably not very well. If you look at the kinds of legislation that we have enacted and the President has signed into law, whether it be default-reduction legislation or student right-to-know legislation or campus crime legislation, there is a feeling that colleges aren't managed very well.

DR. ANDERSON: The Administration's budget proposal has suggested, as I understand it, a cap on the tuition charged at proprietary institutions to federally aided students. It doesn't take a terribly fertile imagination to envision some variant of price controls extended to not-for-profit colleges and universities.

How significant, Rick, is affordability? How significant a political issue is affordability of higher education and can you imagine some set of circumstances that might lead to price controls in the broader industry?

MR. JERUE: I think affordability is an extremely important political issue. It depends on what time of the year it is, but it is certainly one of the issues that we get the most amount of mail on, particularly when college bills come due.

Most members of Congress have had college experiences. They have families. They have children going to college now. They are struggling with trying to afford to pay for college. Their constituents are concerned about it. It is probably as important an issue that will dominate reauthorization as any other.

If something like the budget proposal, limiting the amount of cost that can be covered by student aid at proprietary schools, is adopted, it sets a trend that could easily be followed for the traditional sector. If you buy into the concept that the cost of vocational training should be linked to community college costs, it is not a hard leap to say that the costs of education that are going to be covered by federal expenses would be costs that are somewhat equivalent to low-cost public four-year institutions.

So it is an issue that you should be concerned about, and I think the whole affordability issue is one that will be looked at very closely during reauthorization.

DR. ANDERSON: We are now in the throes of reauthorization, as you mentioned. How likely is Congress to tackle structural reforms in the federal student aid programs?

MR. JERUE: I hope very likely because the student aid programs are terribly flawed right now. I do hope the Administration keeps pushing the concept of a new direct lending program. Such a concept offers a lot of promise towards simplicity and would do away with some of the complexity of the program that currently exists.

Last year, when we were doing the budget reconciliation bill, in the House we proposed reducing some of the lender subsidies in the Guaranteed Student Loan (GSL) program as a way of trying to come to grips with some of the budget savings that we had to come up with. As you could imagine, the lenders were quite opposed to the reduction in their subsidies.

When we were making that proposal, we asked the Congressional Budget Office to project what the cost of the Guaranteed Student Loan program would be over the next five years in terms of annual federal appropriations. That cost was approximately $18 billion. Of that $18 billion, close to $13 billion would go to lenders in terms of subsidies.

You have to raise the question of whether a program that is so heavily subsidizing lending money that goes directly to banks is the best way of trying to finance the student aid system. I would contend that much of the default problem has to do with lending practices. When you are lending to low-income students who have never had a borrowing experience and you do that through the mail with 24-48 hour turnaround because you have a favorable guarantee agency that has a close relationship with you, I think that contributes to the default problem.

Major structural changes, such as institutions being the major lenders in the program regardless of how that is financed—we can discuss financing mechanisms all day—and a simplification of the grant programs make an awful lot of sense.

There is one other major structural change that is absolutely needed. Our student aid system today does not reward persistence. A campus-based system that rewards persistence, students' moving through the system, and achievement is extremely necessary if we are going to continue to gain the sort of political support for the

programs that we so desperately need.

DR. ANDERSON: When you talk about—and this would be to either of you—when you talk about direct lending, are you also thinking about some form of coinsurance in loans, making institutions in part responsible for insuring loans?

MR. JERUE: We are looking to all sorts of suggestions on how to do direct lending. I don't think anything is either off the table or not open to discussion. I just think that if we are going to hold institutions accountable for the defaults of their previous students, we have to give the institutions more of an immediate and direct role in originating those loans. Today you have too many other players that are beyond the control of institutions; whether it be institutional coinsurance or federal insurance or whatever, all of those matters are open for discussion.

DR. ANDERSON: Given the projected democratic . . . demographic changes . . .

MR. JERUE: We hope it is Democratic. Charlie won't comment on that, but I hope it is Democratic.

DR. ANDERSON: Given the projected demographic changes over the next decade, how is Congress's interest in higher education likely to change?

MR. JERUE: Historically the federal role, at least in Title IV and in some of the education programs, has been trying to ensure that finances are not a barrier to postsecondary education. If you look at the trends of minority enrollments, who the next generation of college students will be, the fact that older students are becoming increasingly the majority on college campuses, we have to look at the programs and see if they are continuing to address these new populations. I don't think they are doing it very effectively now. So I do think that the programs are going to have to change dramatically.

The other major political force out there is the perception among middle-income Americans that they cannot finance college and that federal efforts are not aimed in their direction. There is going to be a tremendous effort in this Congress to try to expand student aid programs to try to address some of the concerns of middle-income families. That effort is going to run head on into the budget difficulties we have, to the new budget rules, to the tight budget times that are confronting the federal government. However, if I hear the members of our committee correctly, more and

more of them are interested in trying to make sure that middle-income families are somehow included in the Title IV student aid programs.

DR. ANDERSON: Thank you.

Let me move to Pat. Pat, how would you characterize the public debt market of the 1990s, and in that regard, are colleges and universities more likely to rely on public borrowing than in the past? There has certainly been a lot of debt, a big increase in the 1980s.

PATRICK HENNIGAN: I would like to start by answering your other question about how we would rank university administrators. I have some data that are useful from the market perspective. From the investors' perspective, investors who buy your bonds and notes, they generally would rank college administrators about 7-8 on a 10 point scale and hospital administrators about a 5 or 6. When you look at the outstanding ratings from Standard and Poor's alone, 80 percent of the university ratings are A or better, while only 62 percent of the hospital ratings are A or better.

The big change was from 1983 to 1989. My concern as we go into the 1990s is that we devise strategies for keeping the cloud that has been following health care from following higher education as we go into the demographic trough in the mid-1990s.

As we look at the public debt market, we can look at the market as a whole and then look at the higher education sector within that market. Toward the end of the 1980s, as a lot of the revenue bond categories became riskier for investors, was a flight to quality. A lot of buyers bought higher education bonds who didn't buy them in the past.

For about two, three, four years before I went into the banking side, I was in the research side. I spent a lot of time with investors, trying to help them understand how you do your financial statements, which is always a challenge. I recently was working with corporate investors. We were working with Columbia University on a taxable MTN (medium term note) program and the first step was to try to educate my sales force on how Columbia presents its financials to the outside world and then to try to convince the investors that they can understand them. So there are some things on the accounting side that can cause a certain amount of concern to people who read numbers for the first time.

When we look at the general market, there are a number of angles. Supply rates, credit spread, demand, access. There are probably more investors we would like to see buy higher education bonds, but more are buying them now than used to due to credit quality and, of course, changes in the tax laws.

When we look at the supply side, the market in general has been issuing about $120, $125 billion a year. The total amount of municipal debt outstanding is about $800 billion, which is roughly the size of the corporate bond market. The markets are very similar. And, as you know, corporate credit quality has been plummeting in the

last few years. Health care has been dropping off since 1983, but S&P (Standard & Poors) believes it will start to stabilize this year.

Higher education is poised in an area where people are going to start getting more concerned. When administrators are taking a two-, three-, or four-year horizon and doing things to manage what you see as problem years, those are the kinds of signals that investors want to see.

They don't like an AA bond that showed an $8 to $12 million surplus for the last five years and this year has a $20 or $30 million deficit. It is rather startling. They are not quite sure how it all came about.

These are a couple of the interesting things we will see occurring in the 1990s, especially staring around 1993, 1994. We expect to see 20-25 percent of the market supply decline because of bonds that were sold in 1980, 1981, 1982 and have been prerefunded. If you are talking about taking $150 billion out of a $800 billion market, there have to be other investments for those dollars.

The general supply is not going to keep up. We think there is going to be a very strong demand. If you believe that the aging baby-boom generation is starting to invest more rather than spend, there is going to be also another aspect there of increased demand.

The tax law changes are a bit of a concern. It seems to me we have a three-tiered market. We have the independent schools over the cap, the independent schools under the cap, and the public institutions. In terms of the 1990s, we are going to see more public institutions come to market because state treasuries don't have the kinds of reserves they had at the end of the 1970s going into those recessions. When we do any kind of comparison of state treasuries, if you look at the surplus in relation to the budget or any measure of wealth in the state, it is far lower than it was going into the recessions in 1980, 1981, 1982.

My sense is that more and more public institutions will be looking for ways to come in. We have seen three already come in to the market using indirect cost recovery as the security. I am not sure that is going to heat up.

[Laughter.]

But we hear from a lot of state treasurers and others that are looking at auxiliary and different kinds of issuance. For the independent institutions, it is a question of leadership. It is hard to build a dynamic constituency of voters out there for the 20 to 30 institutions that are over the cap. It is tough.

The general perception that our higher education system is starting to lose its edge in terms of research and the preeminence we have in those areas may lead to a compelling argument. I don't think it is the dollars that will affect the type of issuance and the role of the sector in the 1990s.

Generally, we are going to see, as I said, greater demand, not a lot of supply.

Hopefully your ability to maintain the strong perception of the quality of higher education management will be a key factor.

DR. ANDERSON: The credit ratings are an attempt to assess the likelihood or the non-likelihood of default. Specifically, what are the factors that S&P and Moody's are looking at most closely and what can we do to improve our credit ratings?

MR. HENNIGAN: As I mentioned, compared to many other sectors, the sector as a whole is strong in terms of credit quality. There is generally a great lumping in the A category. A number of you folks who have gone in to press for rating increases have found that sometimes there is sort of an A1 hurdle with public institutions and some of the smaller colleges. The larger research institutions are able to press their case and do better.

Obviously, there is a lot of concern about and some confusion over matriculation ratios or yield and we are finally seeing declines in application pools. So, that is causing a bit of concern.

But, as I said, the key issue is hitting it head on, as a lot of you have been doing, building declines into projections, looking at two- or three-year plans to reduce spending to levels that are manageable, and the whole issue of strategy for the spending of endowment. We are seeing more and more emphasis on that when rating analysts are talking to universities.

Universities that are spending 8 percent or trying to get a spending rule down to 4 or 5 seem to be a much better target for the future. When you review the credit for 1990 in the municipal area, the greatest number of down-grades were on housing bonds for 1990. But the next category were hospitals and colleges and universities, which I found a little surprising.

Part of that is skewed in 1990 because we had all these down-grades in New York state. If you start down-grading State University of New York, which has outstanding almost $3 billion in debt, that is a big chunk of the market; City University is another $1.3 billion. It looks on a statistical basis like colleges are starting to go into this down-grade phase, but I don't believe it is true nationally.

S&P points out the New York schools and sometimes points out two or three independent schools that it had down graded over the last year or so. But the general trend, to me, doesn't seem to be as serious as in health care.

DR. ANDERSON: Certainly, the default rate in higher education has been very, very modest. Do you see any change in that? Do you see defaults increasing at all?

MR. HENNIGAN: If you look at the overall picture, the last time we saw serious

defaults occur, I believe, was in the 1970s. A lot of you probably recall stories about three schools in New York. I think they were Ladycliff, Briarcliff, and there was one other institution that actually closed; all three of them had debt outstanding. One of the schools happened to have a high-rise building in Manhattan at the time that Manhattan real estate was doing very well. I believe one of the schools was bought out by West Point. All three of them had issued through the New York State Dormitory Authority. So, you had a situation where the schools defaulted to the Authority.

That is one type of protection that investors see in the 1990s; they expect third-tier schools to have serious problems. If they have debt outstanding, hopefully the state authorities will figure out some ways to manage that debt, since everyone has to issue through a state instrumentality. The degree to which public institutions have system-wide issuance would ameliorate some of their concerns. If a state is in a real bind and has 14 feeder campuses and a main campus, the likelihood, even though it is very politically difficult to do, is to close a feeder school. It would keep the system intact, strong enough to cover the debt service.

The default history is far lower than what we see in other sectors and once again it will be the way that it is managed in the 1990s that will affect the perception.

DR. ANDERSON: Let's shift from funding assets based on debt to funding assets based on equity.

George, as we enter the 1990s, there are a number of significant clouds on the horizon or that have already approached and are raining on us. We are admittedly in a recession. There is war in the Persian Gulf and there is a seemingly intractable federal deficit. How will these and other issues, as you see them, affect philanthropy in the 1990s?

MR. BRAKELEY: I guess I would say modestly. Historically, philanthropy has held up under all circumstances, except one or two years during the Great Depression, and this includes wars and budget problems and one thing or another.

Historically, for the last four years for instance, the funding for higher education has remained constant in adjusted dollars at around $7.5 billion. I don't see that changing next year, 1991, materially. I have done some research on gross national product (GNP), disposable income, campaigns, philanthropy over the last three years, projected into 1990 and 1991. I was fortunate to get statistics on GNP and disposable income from IBM (International Business Machines), so they are not politically influenced. I had hoped to relate discretionary income to these other statistics. Philanthropy comes out of discretionary income in almost all instances. In 1983, we got figures on discretionary income from the Conference Board, but they have stopped maintaining those kinds of figures, as have other economists and scientists in

this business who look at philanthropy.

Philanthropy, in 1989, was $114 billion and I would suggest that it will go up. That was an increase of 10.5 percent over the previous year. I suspect that it will go up about 9 percent. So, it ought to be almost 3 percent ahead of inflation.

At the same time, higher education proportionally will suffer somewhat; it will in constant dollars hold its own in proportion to the last three years. I project discretionary income in 1991 at $1.1 trillion, of which about 10 percent will go for philanthropy. That is the pattern that had been earlier set when we could get those kinds of figures. How accurate it is, I don't know, but I have tried it on a variety of people who watch this and they think it is acceptable at 10 percent. So, I multiply philanthropy by 10 and I get discretionary income of a $1.1 trillion for 1991, at least—probably a bit more. I make the point here that there is an awful lot of money out there that nobody is getting in the philanthropic sense.

There are a number of reasons, which we might go into and I believe you have got a question on that. I have a few samplings. For instance, in 1989-90, 20 campuses of the California State University system were up 25 percent over the previous year. Another sampling of 20 colleges and universities was up 20 percent in 1990 over 1989. This sampling included six capital campaigns, including Stanford for $1.1 billion, the University of Pennsylvania for $1 billion, and a few others.

There are always going to be capital campaigns, so there probably is not a problem and they are counting, of course, the cash payments made during that calendar year. There is a sampling of 484 private colleges, the smaller institutions, including 17 capital campaigns, were up 11 percent in 1990. That is calendar 1990. Annual giving in the Ivy Leagues, M.I.T., and such is just about holding even or a little bit off.

The patterns of giving have been changing somewhat. A major Ivy League institution said that it had the lowest number of stock gifts in its history in the first six months of academic 1990-91. The life insurance business is holding up and peculiarly enough colleges are getting gifts of personal property in large quantities. These are art collections, cars, yachts, everything but real estate. Never seen anything like this before. Individuals are often selling off and giving the cash to make up their commitments. The reunion gifts, which typically with capital campaigns are the principal source of private funds for higher education, seem to be holding up. Personal giving is holding up at 2 percent of total income and will continue to hold.

There is always a mistake in viewing philanthropy in toto because 47 percent of philanthropy is religiously oriented, going to churches, parochial schools, diocesan needs other than colleges, church-related colleges. So, we are talking about 50 percent of the total of philanthropy, of which higher education on that proportion would be getting less than the 9 percent that it is considered to be getting now; something over 8 percent.

Again, I make the point that recessions and wars heretofore have not interfered with the promise of philanthropy as such; however, we do have some unusual challenges now in higher education, not the least of which has been mentioned

inferentially here and that is the tuition problem, the growth of tuition, the growth of administrative and support costs, which is in the minds of people but not yet seriously affecting philanthropy, because so much of the money that is contributed to higher education comes from wealthy individuals in capital and reunion campaigns.

The rich are getting richer, no matter how you look at it. The people with deep pockets are not influenced by recessions or wars. Typically, we would find in a capital campaign, for instance, that the top five to 10 gifts will probably provide 45 percent of the money. We don't worry about the smaller gifts. They are going to come in anyway if we just do our job. But even this money is getting tougher to get because the tax incentives have decreased and there are competing causes, so many more and greater needs, particularly with the reduction in federal support of so many nonprofit institutions. Competing demands is getting to be a factor.

Another factor that has come up inferentially is that state-level taxes are inevitably going to increase. I live in Connecticut and there are some advantages in the governor's new budget for older citizens, if it gets through, but he is going to impose an income tax.

In a way, we are giving away somebody else's money, government money, but there is a psychological effect of this and we are going to find in many states that this will influence philanthropy. I still maintain that philanthropy will hold even. I am projecting that philanthropy will go from $115 billion in 1989 to $125 billion in 1990 and to $135 billion in 1991.

DR. ANDERSON: How about corporate and foundation support, is that likely to shift?

MR. BRAKELEY: It used to be the corporations gave about 5.5 percent and foundations about 5 percent of total philanthropy. That is switched around now. Corporations give slightly under 5 percent and foundations are somewhat above that.

We are going to see some slippage in corporate support of higher education. It has already slipped. It is not a serious slip, but it is, without question, a reduction. Corporations are changing their priorities, giving more to lower levels of education, and this is detracting from the funds available to higher education, arts, and culture and a few of the more esoteric forms of philanthropy.

Foundations will continue about the same, perhaps with a slight reduction. Their interests seem to be changing. We have seen Ford, for instance, change over the years. Rockefeller has changed. They emphasize noneducational giving more than other types of enterprises that are more human service, people oriented.

DR. ANDERSON: You have already discussed the potential effects of the rising costs

and price of higher education on public and private philanthropy. You might want to expand on that a bit. Specifically, how will the perceptions of our seemingly inexorable price increase affect ambitious fund raising campaigns?

MR. BRAKELEY: I have been in this business, outside of World War II, for 54 years. I have four grandchildren in college, one at Dartmouth and one at Princeton, where they got hit very heavily. I am very aware of this as a problem relating to the cost of educating.

One of the others is at the University of Maryland and he is now with the Brewers. He is a six-foot-six-inch left-handed pitcher. So, we are looking for some funds coming into the family.

[Laughter.]

They gave him $30,000 just to sign up. He got a car right away.

[Laughter.]

DR. ANDERSON: And you attribute that to his experience at the University of Maryland.

MR. BRAKELEY: These costs are influencing the public psyche but not yet seriously.

I was going to jump into the question that you posed earlier on ranking respect or confidence in higher education administration or the management of these institutions. I would give it about an 8 and I think there is suspicious respect for most higher educators.

DR. ANDERSON: I will take respect any way I can get it.

All right. Thank you very much.

MR. BRAKELEY: Could I add a little something to that?

DR. ANDERSON: Sure. Go ahead.

MR. BRAKELEY: While higher education is affected more than other philanthropic interests by the stock market, I would like to make the point that the wealthy people who give most of the money still have it and are not affected by the stock market, by recession, or by wars. This means that the development committees, the presidents,

the trustees, and the senior officers simply have to go out there. We know the money is there and if they get after it in person-to-person solicitation at the peer level, more money can come in.

We are not doing enough of that. There is a tendency to have paid solicitors; that is, the development staff goes out and raises money and this is denigrating the whole process of philanthropy. You can't ask for money at the peer level when you are a $85,000 vice president of development. After many years of cultivation, you can talk to them as an equal, but that doesn't happen too often.

Higher education is in the top fifth in net worth in the country. This is a basic statistic. Individuals, and this is where most of the money for higher education comes from, the typical alumnus of a private school, are confident that the economy will be back to something approximating normal in about next year.

It depends on who you read and who you talk to, but I submit this as a sort of consensus. Philanthropy has its own problems, but in terms of the future and particularly in the future of higher education, it is pretty sound. It is probably sounder than most other forms of financing and far less suspicious than the increasing costs of administration.

DR. ANDERSON: Thank you.

Moving on to research, Bob, the recent federal proposal for appropriating money for science looks surprisingly good. Frankly, what sort of chance do we have that Congress is going to appropriate these funds? We can push that back to Rick after you have responded, if you want.

ROBERT ROSENZWEIG: That is an easy question to answer. The answer is zero. I gather you have talked to some of my friends, who have told you that nothing I have to say on the subject of management is worth listening to, but maybe I can come back to that question a little later.

It is a very good science budget all in all. Certainly, compared to other objects of domestic discretionary spending, the Administration has made a social policy choice that research and development are high priority items for available discretionary spending.

But there is very little chance that the Congress is going to do what the Administration has asked. The two main agencies that support university-based research are the National Institute of Health (NIH) and the National Science Foundation (NSF). Over successive years, the Congress has exceeded the appropriation request for NIH and cut the appropriation request for NSF. And that will be the experience this year.

There are a lot of reasons for that. They come in different appropriations subcommittees. Biomedical research has a special place in the affection of congressional and public minds because of its obvious perceived relationship to public health. The National Science Foundation is, and has been, a favorite agency in the age of the competitiveness crisis, but hasn't fared as well compared to NIH, in part because it competes every year with veterans' health programs, housing and urban development, and NASA and the Environmental Protection Agency. It faces some very tough competition.

When you combine that with the Congress' affection in recent years for science education, the result has been that while NSF has gotten significant increases in appropriations over the last four or five years, the core programs of NSF, the programs that fund investigator-initiated research, which most people believe is the seed bed of creativity for American science, have on the whole suffered.

A majority of them are funded in real dollars less generously now than they were a decade ago and there is a risk that the same thing could happen again this year, the reason being that while the Administration has asked for a 17 percent—I guess it is a 17 or 18 percent—increase, suppose they get half of that? It would be a generous increase in any agency's appropriation to get 9 or 10 percent this year. Where is the reduction going to come from? It is not going to come from science education.

It is unlikely to come from the centers programs, at least not most of it and the main target is likely, again, to be the investigator-initiated programs. That is a very serious risk. How can that be countered or what can be done about it? Well, the great flaw in the good science budgets we have had in the last half dozen years is that first the Reagan Administration and then the Bush Administration sent them up to the Hill and then forgot about them.

There is no political activity on behalf of science at all, unless you count NASA as science. I don't happen to count most of NASA as science. I would argue that you ought to put the space station aside. It is the greatest public works program in the history of the world and some valuable things may come out of it, but it ought not to be counted primarily as science.

The political effort on behalf of the National Science Foundation and the National Institutes of Health has been largely absent. Unless the Administration this year is prepared to go at the critical times to the relevant appropriations subcommittees and say we want National Science Foundation funding more than we want additional money for X, Y, or Z, it is not going to happen.

There are some other aspects of the budget that deserve some comment, I suppose. There is a risk in the NIH budget. The budget that the Administration put in, while a generous 6 or 7 percent increase over last year, is not adequate to fund fully the number of grants that the Congress is going to be pressured to make.

That has been a problem over recent years. The appropriations have been inadequate to fund the target number of grants that scientists and others insist on. The agency has responded by partially funding grants, a practice that brings scientists

back to their home administrations, asking how they are going to do the work that the government has told them they ought to do; administrations are under pressure to provide extra money.

It also puts additional pressure on indirect cost rates as a way of funding additional direct costs for the grants that are made.

MR. JERUE: I agree with Bob.

DR. ANDERSON: In January, Representative John D. Dingell (D-MI) requested an investigation of indirect cost rates, apparently to determine whether the money is being spent wisely and properly and whether the rates are reasonable. In addition, the Department of Agriculture has limited indirect cost recovery to what I believe is 15 percent. Is that right?

DR. ROSENZWEIG: 14.

DR. ANDERSON: 14 percent. It seems to me these actions are a signal, but do you see these actions as a signal that the government is trying to leverage its market position as a primary contractor in basic research to get more bang for the dollar?

DR. ROSENZWEIG: The short answer to the question is probably yes, but let me back up a step or two and go through some of the background.

The first thing to understand is that university research is a bargain for the government. It is a bargain for industry, for that matter. I have a son-in-law who is in the venture capital business and his company makes small research grants to universities and to nonprofit research corporations. He was quite surprised, he told me, to find how much more they got for their money from universities than they get from places like SRI or comparable organizations.

The reasons are quite simple. The indirect cost rates at universities are much lower and you get a lot of very good cheap labor in the form of graduate students. So, my son-in-law's company is delighted with the business it does at universities, as the government ought to be delighted with the business it does at universities. The reason why the government is, from time to time, less than delighted has to do with the budget pressures here in Washington rather than what is actually happening on the campuses.

The current interest in indirect costs has two sources, I guess. One is the budget, and I will come to that in a moment; the second, the more glamorous, certainly the

more titillating, is what has been happening out at Stanford and what John Dingell has been doing with what has been happening out at Stanford.

The important thing about what has been happening out at Stanford is that there is both more and less than meets the eye. Virtually everything that you have read in the newspapers about developments at Stanford, about disclosures of practices at Stanford with respect to cost recovery, has absolutely no relevance to policy at all. It has to do with practice. It has to do with different ways of accounting, but raises very few fundamental, or even important, questions about the system.

These are important questions about the system that haven't made the newspapers that are raised by Stanford's experience; they have to do primarily with the legitimacy of the use of memoranda of understanding as a way of reaching agreements with the government on various aspects of recovery. Those will be negotiated. How the negotiations will come out, I don't know, but that is in the process of happening.

The main danger is that the hearing that Congressman Dingell is going to hold on the 13th of March and the newspaper publicity will contribute to an atmosphere in which those who challenge the system primarily for budgetary reasons will have what can be made to look like structural reasons for taking the actions they want to take.

The actions they want to take are to lower recovery and the reason they want to lower recovery is because they feel they can get more research bang for the buck by paying more money into the direct cost lines of research and less money into the indirect cost lines of research. We argue, not surprisingly, that one cost is the same as another cost. They are all costs of research. You just account for them differently because it is more convenient to do it one way than another. We will continue to have those arguments.

All of the attacks on the indirect cost system of the 1980s came out of budgetary arguments. They came out of a desire on the part of NIH or OMB (the Office of Management and Budget). NIH will tell you it was OMB's fault. OMB will tell you it was NIH's fault. Whoever's fault it was, it came out of a desire to save money in order to spend more on the direct costs of research.

We are, as I say, resisting that. Our answer to all of that is found in the recommendations of the Pings Report, so named because it came out of a committee chaired by Neal Pings, a provost at the University of Southern California.

Fred Ford and Bill Massy were both involved with that committee. We are now in the process of negotiating those recommendations at OMB. The questions that have been raised recently about indirect cost policy are met satisfactorily and, indeed, quite soundly by the recommendations of that report. If anybody is interested, we can talk about it later.

DR. ANDERSON: As we are being squeezed on the indirect cost recovery side—the institutions feel that they are being squeezed or potentially squeezed—the Administration is proposing to eliminate funding for NSF academic research facility

modernization. Is there any serious hope for facilities support from the federal government?

DR. ROSENZWEIG: At the same time that it zeroed out the NSF facilities program, which had had two years with a $20 million appropriation each year, a new $20 or $25 million facilities program was put into the Department of Agriculture budget, apparently in an attempt to head off making the whole Department of Agriculture budget a huge pork barrel, which it has been in the process of becoming in recent years.

I don't know what to make of that. The government spends a lot of money on facilities. The question is how it wants to spend it. The indirect cost rate has become an instrument for the financing of space and costs related to space. I am told that in the current fiscal year, resulting from the last Congress's actions, something close to $0.5 billion was appropriated for facilities projects through the pork barrel route. *The Chronicle of Higher Education* is coming out with that story either this week or next week.

The question is not whether there is money available to finance facilities. The question is whether that money is going to be organized programmatically and appropriated and administered in such a way that it will produce the results that sound public policy ought to want from it. The evidence so far is that the answer to that question is "no," it is not going to happen that way.

While the NSF program may be salvaged for another year or two at a relatively tiny appropriation in terms of the magnitude of the problem, it is not going to make a significant contribution to the solution of the problem. Unless there is a political will and a way can be found to mobilize the money that is now being spent in other ways, we are not going to see a major attack on the facilities deficit or any other infrastructure problem in higher education.

DR. ANDERSON: Can you say anything about our allies and/or potential allies in industry in helping us mobilize support for higher education in science?

DR. ROSENZWEIG: Yes. I have worked a lot with CORTEC in recent years. CORTEC, you probably all know, is the Council on Research and Technology. It is a group of 30, 40, 50, 60 corporations and a larger number of universities that lobbies for appropriations and programs designed to enhance American competitiveness. It grew out of a predecessor organization that was formed explicitly to lobby for the research and development tax credit. It has continued to have a major tax agenda, trying to get the R&D (research and development) tax credit permanently authorized.

The R&D tax credit is an industry issue, rather than a university issue. A few years

ago, CORTEC picked up the facilities problem and was instrumental in helping to get the NSF program authorized and to get an appropriation for it. This year its main agenda on the education side is highly trained scientific manpower; it is working to produce appropriations in the major research supporting agencies for a program that the Administration was apparently going to put forward. This proposed program came out of recommendations from a FCCSET (Federal Coordinating Council for Science, Engineering, and Technology) committee, but at the last minute the Administration didn't put it forward. It proposed fellowships and traineeships in the Department of Defense, additional programs in NSF, the Department of Energy, NASA, and so on, predicated on the proposition that both industry and universities will need more highly trained people, scientists, and engineers than the system is likely to produce over the next decade and a half. The time to do something about that is now and not a decade from now when it is too late to start.

DR. ANDERSON: You have mentioned competitiveness several times. Much of the increased interest in academic science arises from policy makers' and legislators' expectations that more science research on the nation's campuses will help reinvigorate our economy. How realistic are these expectations and is there any danger of a mismatch between expectations of what higher education can do for the economy and what will happen?

DR. ROSENZWEIG: That is an interesting question and an important and difficult one. In the broadest sense there is no question that progress in science and technology is essential to economic development in the modern world. What is less clear is that those nations that engage in science and technology at the highest level will necessarily reap the benefits in economic terms.

There is a lot of history that suggests that they don't. The English, after all, were for much of the 19th century preeminent in many fields of science and we came along and eventually ate their lunch. Just as we were economically in the middle of this century and the Japanese came along with no science base at all and translated available science into excellent technology, manufacturing, marketing, and product development.

So there is no necessary connection between what happens in the laboratory and what eventually finds its way into the stream of commerce and becomes economic value for the society. Those links have to be made, and whether we have made those links well enough or not still is highly questionable. If you want economic development in this country over the short term, there are public policies that are more likely to produce it than spending more money on research.

Fiscal and financial policies have a much closer relationship to what happens in the economy over any short term than does science policy. However, it is a foolish nation, indeed, that would give up the one advantage that it has. Clearly the advantage that we have is a preeminent position in virtually every field of science and, therefore, the

opportunity to have the first crack at translating science into useful technology and translating technology into economically valuable products. If we are not able to do that, somebody else will do it, but it will be our fault. As long as we keep our eyes on what needs to be done, the investments in science that we are now making ought to be repaid many times over in the future.

DR. ANDERSON: Thank you.

Let's move now to the states. Recessions not only affect the budgets of families but they affect the budgets of states. The current recession is obviously leaving many more states with more demands on its resources than can be met. Dave, in what promises to be a very tough competition for funds, how is higher education going to fare?

DAVE LONGANECKER: Well, it is going to be very difficult for higher education in the 1990s. There are a few things I will mention here that I think will make it difficult.

One is that federally mandated costs are taking up a larger share of the dollars. As most of you know, the share of state funds going to higher education in most states has been going down for the last decade. Even though we have fared reasonably well, we have not kept our share of total state resources. In particular, the areas of corrections, medical care, and social services have been taking an increasing share from mandated federal costs that are being sent down to the states.

A second factor is that there are other, non-federally mandated, increases putting demands on those state resources. The biggest demand is the infrastructure of the states. The highways are falling apart and the states are having to pick up more of the cost of that.

A lot of the correctional costs are being mandated, but, at least in the state in which I currently work, much of the increases in prison costs are a function of the demands of the populace, which wants longer prison terms and fewer criminals on the street. The demands for K-12 and preschool are increasing from other sources that the state traditionally has not funded, at least funded very richly.

In addition, there is a shift in responsibility from the federal government to the states in some other areas. Higher education is a very strong example of that. Even in the area of basic access to higher education, it is the states that are funding it much more significantly than the federal government has. That shift has occurred where the states have been willing to accept it.

A serious concern, as I look at the polls, is that although we have done reasonably well in the last 10 years, legislatures and governors are more supportive of higher education than the populace is.

A recent poll showed that there is a lot of support for education. If you break that down between K-12 and postsecondary education, higher education is well thought of, but the idea of providing additional funding for it is not highly thought of. That is serious, because as soon as the legislators and the governor figure that out, that is not a strong recipe for success.

Another serious issue for us is our credibility. To answer the question that Dick asked all of us to address about how well we think people think we manage our enterprise, particularly in public higher education, I do not think that legislators and particularly governors by and large think we manage well. Speaking from what I think governors believe, having worked for a few of those, there are four factors that weigh into their decision.

First, imagine being a CEO of a major corporation and having virtually no control over the biggest component or the second biggest component of your costs or at least feeling as though you don't. That is how many governors feel in their states. Higher education in particular is to a great extent beyond the control of the governor, or at least governors often feel it is. They certainly don't feel they have the same control they have over other aspects of state government. K-12 education and higher education generally represent somewhere between 50 and 75 percent of a state's budget. So there is that feeling of lack of control.

There is a bit of arrogance in higher education and certainly amongst our faculty. That arrogance is often perceived by legislators. We have an image. We have generally built our buildings to be aesthetic spots. They look good compared to state hospitals or sheds for the highway department. We tend to look as though we are wealthy. Our faculty salaries are higher than almost any other employees in public service, even though they may be relatively low compared to what the faculty deserve or relative to other states and other industries where these people could work. Certainly, our faculty earn more than the person driving the snow plow. In my state a number of very influential legislators spent this January in Miami at the Orange Bowl, as guests of the University of Colorado. Now that was a good investment, but it also leaves the sense that we have resources that, in fact, come from a source that doesn't help us in our instruction.

These are those things that leave people with a sense that we are in better shape than we might be. There is also, as all of you know, a limited will and capacity to tax. It is more a will in many states than it is a capacity. In this current era, we are facing a lack of willingness to go and generate that resource.

In general, the 1990s are going to be a very difficult time for higher education, but there is some room for optimism. We have to make the case to the people better than we have because many of them don't believe higher education is in that much trouble. They look at what we charge. They often confuse what is charged at the most expensive institutions in higher education with what is charged in higher education over all. They very often confuse the price that we charge with the cost of providing the service, which in public higher education is quite a bit different, and they often don't perceive that there is a problem.

We have to make the case with demonstrated accountability, not just the rhetoric we have used in the past. In that regard, outcomes and the demonstration of outcomes are going to be absolutely critical. Demonstrating that the process itself works is going to be pretty important.

There are an increasing number of people who don't believe higher education is working, that we have lost our way, that we don't educate people well, that we work for our faculty and not for our students, our consumers. As that evolves, what some people are calling the education disconnect, we have a major problem occurring and we are going to need to address that more significantly.

Interestingly, that could come to help us. In K-12 education, because they have been in a crisis, they seem to have fared fairly well. Because higher education hasn't been perceived as being in a crisis, people don't think we need attention. So, maybe if we say we are in just as bad shape, just as bankrupt as K-12, we would have a chance of garnering some additional financial support.

As we move forward, one of the keys will be getting the business community to work actively with us to make the case of the importance of higher education for economic development and for the kind of social fabric of the communities that businesses want to exist within. It is going to be awfully difficult, but there are some possibilities for us.

DR. ANDERSON: Of all the financial problems facing public higher education, what is going to be, in your view, the toughest to change?

DR. LONGANECKER: Probably the toughest task ahead is how we convince legislators and governors to continue their support at the same time that we admit we have problems and need to reform. We look two-faced when we do that and, indeed, we are and have to be.

The type of job that I work in, coordinating commissions and boards around the country, has kind of a schizophrenic existence. We are on one hand expected to be the spokespeople for higher education in the state. On the other hand, we are supposed to be the major critic of higher education and major avenue for reform. That can make us sound a bit duplicitous.

How do we get away with it? We have to talk about some funding strategies that clearly link funding with performance, some true accountability. That is going to involve providing much better information than we have in the past.

To a great extent, until about 1980, higher education received funding because it was a good thing to fund. For the last decade, we have had to make our case better and I don't think we have done that in all cases. That is going to mean additional reports, which will mean some additional administrative costs, no doubt. It is going to

mean the things that you are starting to see in some of the states' scorecards on higher education. Some of that information is going to be used very poorly and misused, but we are going to have to continue to demonstrate why we deserve a substantial share of the money that the states are providing.

DR. ANDERSON: For some number of decades, many economists have been calling for a sharp increase in tuition at public institutions, with at least a significant amount of the savings being diverted to student aid. As the state budgets are becoming more and more squeezed, these economists are seeing surprising allies among the leading public universities as they look for tuition as relief from their budget problems. What is the future of low tuition?

DR. LONGANECKER: Well, that will vary from state to state, but I don't think there is a strong future for low tuition. That argument will pick up as we move along. At the same time, at least in the last few years, the federal government has been arguing that we should maintain low price, confusing cost and price in public higher education.

In fact, as we look at the constraints on higher education in hope that the demand actually increases, a larger share of our population, particularly minority and disadvantaged citizens, will start to participate more actively in higher education. We will need, particularly at the two-year level, to increase what we are doing. We are going to need additional resources in higher education.

I wouldn't suggest a reduced state commitment. Maintaining that state commitment, accepting that it won't increase substantially, and recognizing that the demand for the service probably will increase mean we will have to generate revenue. The only viable source is tuition. We are going to have to charge higher tuition, provide more highly targeted use of public subsidies, using that for financial aid. I think that is almost inevitable if we are to achieve our objectives.

DR. ANDERSON: Dave has already answered my question about how the state legislators and their staffs feel about the management of colleges and universities. If we weren't running late on time, I wanted to ask him how he felt about the Colorado-Missouri game last year, but we are running late.

Let's open it up to questions from the audience. Charles Kolb had to leave, go back and make domestic policy. I think he probably heard some good ideas here that he is anxious to implement.

Questions and Answers

FREDERICK R. FORD: Fred Ford from Purdue University.

My question is addressed to Rick Jerue and his comment about Congress' attitude about the management of universities. I suspect he is pretty much on target, that, indeed, they do hold us in fairly low esteem lately. That is a severe change from the good old days when universities were held on a pedestal. Maybe I am biased, but I think it may be the result of drawing conclusions from a relatively few numbers of instances, like the Stanford case that is currently in the news.

Most universities don't have yachts in their indirect cost rates. I wonder if you could give us some pointers and suggestions as to how we could go about winning back the support for those institutions that try hard to be well-managed.

MR. JERUE: Congress' impression is based to a large extent on a lack of information. There are only a handful of members of Congress who follow higher education closely, who have at least a small bit of knowledge about how colleges work. We held hearings on college costs and the factors that are involved in setting prices and costs back in 1987. Only about three members attended.

And I do think that the impression is anecdotal. One member who has very little information talks to another member who has less information and those two then talk to someone else and pretty soon that becomes the consensus.

You should take the time to explain what you are and what you are about. When you see something like the Stanford situation, take time to explain what you do in that area to your congressional delegation. An easy thing to do would be when institutions are setting tuition policy for the coming year, explain it and explain why to the members of Congress, because those are the ones who are going to be hearing from constituents. Those are the people who are going to be written to about the high cost of college or about some issues that are considered to be instances of mismanagement.

But also recognize that there are some fundamental and legitimate questions that go to the heart of management. Intercollegiate athletics is an example. David Longanecker touched upon it, but members of Congress like to read the sports page and, again, they see anecdotes of mismanagement of intercollegiate athletics, of abuses there that they cannot understand and they translate as being applied to the entire enterprise. What the presidents have done with the NCAA (National Collegiate Athletic Association) and some of the reforms that were made in the last NCAA conference were commendable and will go a long way to restoring confidence.

But a lot of it is lack of information and lack of understanding of how you operate and who you are. And your past inability to explain that well.

DR. ANDERSON: Bob, do you want to answer that?

DR. ROSENZWEIG: Yes, I would like to say a word on that subject. Management in this country, public and private management alike, has fallen into low repute in the last decade or so, for reasons that are generally familiar to us. Colleges and universities have shared in that, whether justly or not. They certainly suffer some of the same abuse that other kinds of management have gotten in this country, but the question I find myself asking more and more often lately is compared to what? It is a defensive question maybe, but sometimes you get something revealing out of it.

If you compare the management of the colleges and universities in this country over the last third of a century to the management of the automobile industry in this country, we come out pretty well. The automobile industry, which was probably the greatest industry in history in terms of manufacturing power, has been driven steadily into the ground by managers who were rewarding themselves ever more richly for the job they were failing to do. The university system in this country started about a third of a century ago with a rather mixed and frequently indifferent quality and has built itself, both in size and in intellectual power, into the leading education industry in the world.

That is not a bad record. I don't see anything to be apologetic about. What has happened is that there is a real confusion about the meaning of high tuition and rising indirect cost rates. It is assumed that those are signs of inefficiency. Those who are primarily responsible for making the assumption are parties at interest. In the case of tuition, it is largely parents of students and prospective students. In the case of indirect cost rates, it is largely faculty. There are a lot of parents of students and prospective students and faculty who are articulate and willing to make their views known. They disproportionately affect the public reputation of higher education management.

But the record is a good one and it needs to be explained better and advertised better than it has been.

DR. ANDERSON: We have heard a lot about the Stanford yacht and the details of it are not so lurid as they would seem. I am wondering if Bill or someone from Stanford wants to talk a little bit.

WILLIAM MASSY: No.

[Laughter.]

Since challenged, though, I think I should say a few words. I am a sailor and I am in the Stanford administration and the biggest regret—actually the second biggest regret, the first one being that the whole thing happened—the second biggest regret is that I have never even set eyes on the darn thing.

This was a gift to the Stanford sailing program. It went into a pool by a simple accounting mistake, a pool that has many thousands of items in it. The list of items is a computer printout of about seven inches that has 20 items per page. You can imagine how many items are in a fanfold computer list seven inches high. The sail boat didn't get caught. And that cost, by the way, is a perfectly allowable cost under OMB Circular A-21. Because it was put in the wrong pool, there was an accounting inconsistency between the numerator and the denominator of the allocation procedure.

It was dead wrong. It was a plain out and out mistake and somebody didn't catch it and somebody darn well should have. And from now on, we will have a system that does a better job of checking those things.

As far as some of the other items that have been in the papers . . . the materials in the president's house, for example. It is a condition of employment that the president live in a furnished house. The amount of dollars at stake are very small. A-21 makes it very clear. Believe me, I have had occasion to go back and reread that section of A-21 recently. A-21 makes it perfectly clear that what is necessary for institutional purposes, if it is reasonable for an institutional purpose, acceptable, and appropriate is allowable as reasonable and necessary for indirect cost pools.

Those costs were judged by the proper people in the system to be reasonable and necessary as part of this historical landmark, this furnished house, and the dollars are trivial. It is not trivial politically. A-21 gives some misleading guidance. If you want some advice, don't rely on the language in A-21. Make the political judgment about how it will feel and how it will look and adopt a higher standard on costs like that.

The fact of the matter is those costs are perfectly reasonable and allowable. We trust that all of this will go by. There will be a hearing. We will make our case. There will be further newspaper and television accounts in the days following, but the real task for higher education is to address the question of how research is to be funded, how this wonderful enterprise produces results that are the wonder of the world, how it can continue to do its thing, to be productive. That is where we all ought to be focusing.

One last piece of advice for you all is look very hard at your accounting. I believe that there is nothing we are doing at Stanford that is not shared in one way or another by every institution in this room and there but for the grace of God go you. Please, while you have time, take care of it.

CLIFFORD ADELMAN: Cliff Adelman from the Office of Research.

Ultimately, this question is going to fall on Pat Hennigan because he said something that was rather staggering, for those of you who were here last night. It sent me back against the wall listening to everybody who was up here and recalling the conversations that Sal and Jeff had a couple of years ago, as they designed this

conference and what happened and how it is emerging here.

Pat said that the perception of bond buyers in the marketplace is that research quality university is slipping and that translates to them into what they are willing to fund in the bond market. As soon as he said that, I said, that is one kind of customer of support and I am listening to Rick say there is another kind of customer from the congressional point of view. That brings us back to the management issues last night. He was talking about Congress wanting to see persistence. Who is persisting? It is the student that is persisting and presumably the funding is for the student.

Charles Kolb said the Administration is thinking that maybe we ought to have national goals for higher education. He said maybe value added. Value added to whom or to what? It is the student again on whom that is focused.

Bob Rosenzweig said that history shows us that a tremendous investment in science and technology does not necessarily pay off for a nation, but an investment in the people who use the science and technology, who are the consumers and adapters of innovations, may. That is the flip side of your coin. You didn't say that directly, but, again, there is a customer issue that is across the board.

We have Pat Hennigan's statement that there is an equation between the perceived quality of the research and the willingness of the marketplace to support dollars for this. If, in fact, it is the research quality that determines the bond quality, what do you do with the 95 percent of the institutions that don't do research but that do have a customer; namely, the customer Rick Jerue and Charles Kolb talked about?

MR. HENNIGAN: If I could just clarify, I don't believe I said that the investor community was convinced or had the evidence that research quality was slipping. I was suggesting that, if that were documentable . . .

DR. ADELMAN: It is.

MR. HENNIGAN: . . . that it could be a strategy for unshackling the research institutions from some of the more onerous tax changes that occurred in 1986.

It is interesting to ask how buyers perceive or change their perceptions. A lot of hospital administrators would like to be able to figure that one out. A lot of it has to do with what rating agencies say about hospitals or universities.

I had, for example, a trader call me up last week and say is something going on in Arizona? A bunch of University of Arizona bonds hit the market. Arizona State hit the market. Tucson hit the market. Nothing from Phoenix. At times things can happen and you don't know what drives them.

But in the long-term perspective, I don't have data that the buyers necessarily perceive. As they see all these competing needs, that it is something that they try to

identify.

DR. ADELMAN: I think you said that the financial quality of the institution was equated with the perceived quality of research in the minds of people who are supporting it.

MR. HENNIGAN: In part, it is probably because the buyer . . . if that is . . .

DR. ADELMAN: If that is true, I am following that through to see where the focus is in terms of the customer, the outcomes of higher education. That is partly what Jeffrey Gilmore is going to point to in his paper.

MR. HENNIGAN: Research grabs headlines and buyers are influenced.

DR. ANDERSON: Pat, you would agree that one of the primary drivers of ratings is the response of students to institutions?

MR. HENNIGAN: If you are looking at the demand, oh, yes, absolutely.

DR. ANDERSON: That is very, very important in the ratings.

MARY JO MAYDEW: I am Mary Jo Maydew. I am the treasurer of Mount Holyoke College.

Rick, my question is for you and it has to do with the implications for all of us as we try to administer some of the changing regulations and statutes that are coming out of the federal side particularly. How can we do a better job of talking with you before some of these changes are made, so that we are sure that you understand and that we have made the case for what some of the administrative ramifications are going to be to things like the direct provision of loans?

MR. JERUE: You have to make sure you have good people in Washington representing you. We rely on the associations in Washington to accurately represent the interests of higher education and to detail all of the potential problems that might exist. We are in pretty close contact with them.

My sense is that the institutions themselves probably have to provide more information to their associations so that they can adequately and accurately reflect those interests to us.

Coming from Massachusetts, you have a unique opportunity with the chairman of the Senate Labor and Human Resources Committee to at least make him aware of some of these changes. These changes are in the works for quite some time. I never cease to be amazed by how something can be in the works and proposed for months and months and until it is implemented, we never hear from institutions about the impact of what is happening.

A good example is some of the recent changes in the budget reconciliation bill having to do with testing of students. That proposal had been in the public domain for a couple of years before it was finally implemented, yet we never heard from the schools who were affected about the problem that particular matter would create.

So, if you have a legislator who is from your state, who is going to be involved in drafting legislation, stay intimately in touch with him or her. If you don't, work through your associations and make them aware and demand that they keep you informed of potential changes and get your response and feedback so that they can communicate that to the people on the Hill.

MS. MAYDEW: May I ask a follow-up question?

DR. ANDERSON: Sure.

MS. MAYDEW: This may be an "all of the above" kind of answer, but I was curious as to whether in your experience Congress is more interested in general in hearing from higher education through its agency representatives, if hearing directly from colleges and universities is sometimes more persuasive, or if, in fact, there is no real dichotomy.

MR. JERUE: I think there is a dichotomy. For instance, in my job with a committee, when I was staff director, I would listen to two groups. I would listen to the Washington groups and people from Montana because my boss was from Montana and those folks had a particular welcome in the office and a major impact on policy development.

You have to make sure that your member of Congress knows of your particular interests. People who are on our committee will listen to their own state people. Those who are working for the committee and the committee staff will listen to people like Bob and Caspa and people who they use as a proxy for the institutions throughout the country.

BURTON SONENSTEIN: Burt Sonenstein, president of United Educators Insurance.

I would like to come back to the issue of perception of affordability and value. It seems to me that the major problem we have is not dissimilar from the problem of health care providers. How do we deal in the academic setting with the concern about the value to students of the educational experience?

My sense is that by slowing down the growth of tuition, we are only dealing with a small part of the problem because it will still be perceived as a very expensive experience for the value received. What can we do as financial administrators to address either the perception or the reality of what value is provided to the student for the dollars required to take a course or attend our universities for a year?

DR. ANDERSON: I will give one reaction to that and I put Stanford on the hot seat before, but on the other side, it has captured the headlines for the good in its cost-cutting campaign. If we see more of that, there will be a perception that we are doing something and we are trying to control costs. And as you indicated, perception is equally as important as the reality.

DR. LONGANECKER: If I could just say something. The real answer is to bring the perception and the reality together. Part of the answer is a serious discussion about reform of undergraduate education and restructuring in some ways and looking at total quality management activities that are underway in the private sector. You look at a small state college and it is organized pretty much the same way as a large research university with about the same number of levels of management. Maybe the model needs some rethinking. There are some things we can do to essentially make it better.

MR. JERUE: I couldn't agree more with what David said. I had a five-year stint in One Dupont Circle, working for a group of institutions that began to lose sight of what they did best and tried to be everything to everybody. They tried to be something they weren't. And because of that, I don't think they focused on those things that they did well and begin to stress those things.

Institutions have to go through a period of self-examination, which most of them are doing now, to identify those things that they do well and get rid of those things that they don't do particularly well and change their missions.

SALVATORE CORRALLO: Just a quick follow-up.

As I sat here last night reading some of the materials, one of the things that struck me—and it is no secret—is that a university, a college, is a cost center, a series of cost

centers; that is, you have a research function, you have an academic function, support function, public service. Many times these are separate operations and in many institutions, the colleges themselves are separate operations.

We talk generically about management, yet the reality is, depending on what you are looking at, you will see different things. The bond purchaser is going to look at certain aspects; the academic person another. Somewhere in this process of looking at efficiency, that has to be considered. We can say NACUBO has done a heck of a job with its cost-saving program over the years, and in that sector one would look at it with very positive eyes. Yet, if you look at the academic side, as discussed last night, we see a lot of different things. Somewhere in this process that has to be clarified. When we are talking about these things, that agenda ought to recognize those more directly than it does.

It is more a comment than a question.

EDDIE J. DAVIS: Ed Davis from the Texas A&M system.

We are uniquely aware of the demographic shifts in Texas and what we prospectively see particularly in the next decade with regard to demand from the most difficult sector of meeting that demand because of students' inability to meet tuition and costs.

After World War II we built the middle class by allowing those who had given a commitment to the country to be rewarded through the GI Bill. What is the possibility of a policy on a national level that would look at some sort of universal service in return for the economic commitment to allow students to complete their education?

MR. JERUE: A form of universal service or at least an outgrowth of that concept was proposed in the last Congress by Senator Sam Nunn and Congressman Dave McCurdy. It ran into considerable resistance from the members of both the House and Senate committees dealing with education policy, primarily because of the belief that the proposal that had been put forth would have based federal student aid on community service. Since federal student aid is need based, the feeling was the only folks who would do community service or universal service were those who were poor and it would not apply universally.

I don't see a true mandatory universal service taking place in the next few years. Unfortunately, the debate of tying student aid or college financing to some kind of service that took place last Congress was resolved, maybe not satisfactorily, but it was resolved and probably will not come back for quite some time, at least until after the presidential elections. If somebody in the presidential elections makes it an issue, then the next Congress might begin to consider it again.

DR. ANDERSON: Thank you very much and thank you to each of the panelists.

Tuition Pricing

Introduction

Frederick A. Rogers
Cornell University

We have three speakers. Each speaker will present his or her paper and then we will take questions and have a discussion. Hopefully, we will have time to do that. They have each planned to speak about 15 minutes and we will have 15-30 minutes at the end for some discussion.

In the session we just had, we talked about a whole series of financial issues other than tuition and the price increase question, which is the question we are going to focus on today.

If I could give you a sense of the context within which we are talking about tuition. We are talking about tuition following a decade of very large increases in tuition and we have some good data on the extent of those. We are also talking about the increases having occurred in a period of time when most other sources of income at universities and colleges were increasing. Research funding was increasing. Real investment returns were high, as we heard from one of our previous speakers. There was broad access to tax-exempt financing. There were many successful philanthropic capital campaigns and it was not a time of decline in enrollment. It wasn't a time of major increases in enrollment.

In what might be described as fairly benevolent financial times, we had fairly large tuition increases. One of the senses is that climate is not the climate we are in today or the climate that is likely to continue.

We come to the issue of how we deal with tuition increases, whether or not they should be constrained in a time that is less hospitable to the financial circumstances of institutions. That in some ways makes the question more relevant. It also makes it more poignant in trying to deal with it because most of our experience is in a very different climate, at least recently.

We have three speakers today to talk about these questions of tuition. They are the questions of how much are people willing to pay, what do we get for what people pay, and what the budget impacts of tuition increases or discounting and financial aid are to net tuition price.

Our first speaker is Rita Kirshstein. Rita will be speaking about research she has been doing at Pelavin Associates for the Department of Education. Rita is a senior analyst at Pelavin and recently completed the study, *Escalating the Costs of Higher Education*. I recommend that to you for reading. It is a fascinating study with a number of new perspectives on some old questions.

Rita has written on a number of postsecondary education issues, including the impact of student financial aid on college persistence, issues in student loan defaults,

faculty utilization, and postsecondary education programs for disadvantaged students. She has been both a student and a professor in public and private higher education.

Our second speaker is Jeffrey Gilmore. Jeff will be making a presentation on his research on relationships between tuition and institutional quality and student outcomes. Jeff is a research associate in the U.S. Department of Education's Office of Educational Research and Improvement. He has more than 15 years of experience in higher education as an administrator and a researcher. In the OERI office, he is responsible for postsecondary education research centers, grants, and contracts. Jeff has graduate degrees in college student personnel services and public administration and received a Ph.D. in higher education from Penn State.

Our third speaker is Sean Rush. Sean will be presenting a paper on tuition discounting. Sean is a partner in Coopers & Lybrand's Higher Education Consulting Practice and has written extensively on the issues of tuition. He has 16 years of administrative consulting and policy-level experience with colleges and universities, state governments, health care institutions, and other service sector institutions. Sean is a frequent speaker at professional seminars and meetings and is also a member of the Massachusetts Public Health Council. Sean received a bachelor's degree and an M.B.A. from Boston College.

These will be our three speakers and we will now proceed through each of them. We ask that you keep your questions until we finish all three presentations and, hopefully, we will have a good discussion at the end.

Thank you.

College Tuition: How Much Are Families Willing to Pay?

Rita J. Kirshstein
Pelavin Associates, Inc.

As background to the paper, I have been working on issues of higher education tuition three or four years and not only on this report; there are several other reports and papers that were background to this that looked at the whole gamut of issues, trends, and costs. We looked at data in every way I could possibly conceive of and then some.

In some ways, the paper I am presenting today is a real tangent from the three-to-four years of work that I have done. It doesn't summarize it in any way. The recent report looked at what the cost of higher education actually is and how that has changed in recent years. It looked at different causes of this change in cost and the extent to which these different kinds of costs contributed to the change.

We tried to forecast the future cost of obtaining a higher education, which, as we all know, is not a straightforward or easy task. We looked at the impact of changes in cost on not only institutions, but on families, particularly lower- and middle-income families. We made some recommendations on how these kinds of costs can be minimized in the future, mostly by looking at what has already been done or what is being tested. And we looked at some state and federal policy options.

After these remarks, Ms. Kirshstein presented her paper, the full text of which follows.

Attempting to explain why college tuition increased so rapidly throughout the 1980s has captured the interest of both journalists and higher education analysts. An endless number of newspaper and magazine articles have offered possible reasons why tuition accelerated at rates exceeding inflation in the past decade. Similarly, many different studies sponsored by a diverse group of associations and agencies have been written to address this topic.[1]

These articles and reports have posited a number of explanations for escalating tuition. Most of these explanations relate tuition increases to increases in the price of other goods and services. The underlying assumption is basically quite simple: if the price of goods that colleges and universities must pay increases, tuition must also increase to cover these costs. Some of the more commonly proposed explanations are discussed briefly.

THE PRICES OF GOODS AND SERVICES TYPICALLY PURCHASED BY COLLEGES AND UNIVERSITIES HAVE RISEN FASTER THAN INFLATION. Total educational and general expenditures increased by almost 20 percent in real terms during the first five years of the 1980s, putting pressure on institutions to raise tuition to cover the increased costs. Many argue that the goods and services used by colleges and universities are not those

measured by the Consumer Price Index. Thus, this seemingly rapid expenditure growth does not necessarily mean that higher education institutions are buying any more or better goods and services than they did in the past.

COLLEGES HAVE BEEN SPENDING MONEY ON NEW TYPES OF PRODUCTS AND SERVICES, OR PURCHASING MORE OF THEM. Technology changes, particularly the rapid growth in computer usage, are typically cited as an example of this argument. Colleges and universities have spent large sums of money updating, expanding, and improving their computer equipment.

PHYSICAL PLANT REPAIR AND MAINTENANCE HAVE INCREASED, REQUIRING ADDITIONAL INSTITUTIONAL EXPENDITURES. Several reports have calculated the cost of repairing or replacing damaged facilities on campuses at billions of dollars. However, data on expenditure trends in the early 1980s do not indicate that colleges and universities increased their expenditures to improve this situation.

FACULTY COMPENSATION COSTS HAVE RISEN. Faculty salaries, one of the largest single expenditures of colleges and universities, increased by approximately 15 percent in real terms in the 1980s. Salary increases were accompanied by a growth in benefits and the "aging" of faculty, phenomena that have resulted in more higher ranked, higher paid professors.

ADMINISTRATIVE STAFFS HAVE EXPANDED. There has been tremendous growth in both the numbers of administrators on college campuses, some of which resulted from increased federal regulations, and the salaries paid to administrators. Administrative expenditures increased, in real terms, by over 25 percent between 1980 and 1985.

INSTITUTIONS' FINANCIAL AID BUDGETS HAVE GROWN. The College Board estimates that between 1980 and 1987, total institutional financial aid grew from $2.8 billion to $4.6 billion in real terms (1988 dollars), or 66 percent. Most of this growth occurred in private institutions.[2]

INSTITUTIONS HAVE INCENTIVE TO RAISE TUITION TO MAXIMIZE REVENUE FROM FEDERAL STUDENT AID FUNDS. Critics of rising tuition have accused institutions of raising tuition not only to cover expenditures, but also to maximize the amount of funds they ultimately receive from federal financial aid programs. Federal aid programs are based on need, so institutions can raise tuition without being concerned about students' reactions because aid will insulate them from the price increase, or so it is argued. Little evidence exists to support this assertion.

INSTITUTIONS HAVE EXPERIENCED SHORTFALLS FROM OTHER REVENUE SOURCES. A decline in revenue from state appropriations for public institutions and a decrease in federal funding for all colleges and universities are often cited as factors placing upward pressure on tuition.

CHANGES IN ENROLLMENTS HAVE RESULTED IN INCREASED INSTITUTIONAL EXPENDITURES. Demographic changes in the composition of postsecondary students have increased costs. Part-time students, women, and older students all increased as a percentage of total enrollments between 1970 and 1985. In addition, many colleges and universities have opened their doors to educationally disadvantaged students. Educating all of

these different students potentially costs more than educating the full-time, 18-to-24-year-old.

A Combination of Factors

Interestingly, all of the many articles and reports attempting to explain tuition increases basically share the same conclusion: there is no single explanation for the recent rise in college prices, but rather a number of different factors are at work.

At one level, it is not surprising that so many different studies fail to reach a more definitive conclusion. Although such a generalization may, at first, sound like a typical research "copout," an examination of the more than 3,000 higher education institutions in this country reveals an endless variety of schools. Colleges and universities differ from one another on a number of characteristics, including size, location, sector, mission, course offerings, history, selectivity, quality, and of course, price. To assume that any one or two or even three reasons could explain increasing tuition at the incredibly diverse group of colleges and universities in the United States would indeed be naive.

On another level, it is curious that so much of the discussion of college tuition has focused so exclusively on the "budget-oriented" explanations of tuition increases. The explanations summarized above essentially center on either increases in different expenditures that many colleges and universities faced throughout the 1980s or decreases in revenues that colleges and universities have come to expect.

After years of examining trends in college tuition, along with concurrent expenditure and revenue patterns, this author began to feel that a piece of the puzzle was missing. Expenditure increases and revenue shortfalls do not tell the whole story of why tuition escalated as it did throughout the 1980s. Tuition can also be shaped by the value students and their parents place on higher education and their willingness to pay for it. In other words, expenditure increases do not in and of themselves necessarily drive tuition higher, but rather tuition may be raised as a means to provide colleges and universities with additional revenues to spend. Tuition can thus drive expenditures if students and families are willing to pay higher tuition. These types of explanations are referred to as "demand-oriented" theories of tuition growth.

In one respect, this is not a new perspective on college tuition. Indeed, Howard Bowen in 1980 put forth a similar sentiment in *Laws of Higher Education Costs*. These laws are as follows:

- The dominant goals of institutions are educational excellence, prestige, and influence.
- In questions of excellence, prestige, and influence, there is virtually no limit to the amount of money an institution could spend for seemingly fruitful educational ends.
- Each institution raises all the money it can.

- Each institution spends all it raises.
- The cumulative effect of the preceding four laws is toward ever-increasing expenditure.[3]

What is slightly different about my stance is the emphasis on the role that students and their families play in allowing institutions to increase their tuition. For despite the public outcry over tuition increases in the 1980s, enrollments in institutions of higher education reached an all time high in 1989, when a record 60 percent of high school graduates in that year enrolled in college in the fall. Furthermore, throughout the 1980s applications and enrollments to most colleges and universities did not decline. Indeed, at some of the most expensive institutions of higher education, applications increased at a very steady pace.

Americans have traditionally valued education in general, and higher education specifically, in different ways than citizens in other societies. This faith in education provides an opportunity for colleges and universities to raise their tuition without losing students to any great extent. Similarly, Americans generally believe that there are many benefits to be gained from attending college. Recent research supports this notion.

This paper examines ways in which demand for higher education may be driving tuition costs. However, these so-called "demand-oriented" explanations do not explain tuition increases by themselves. Tuition could increase partly because revenue sources decrease or expenses increase at the same time that students and their families are willing to pay more to attend college. Demand-oriented explanations do, however, assist us in understanding how there can be simultaneous concern over rising tuition and a strong belief that higher education may be worth the cost.

Families' demand for and willingness to pay for higher education in the 1980s may already be changing. The current recession is affecting the pocketbooks of both families and postsecondary institutions. The era in which colleges and universities could increase their tuition and find students willing to pay may indeed be ending. This does not change the fact, however, that tuition escalated steadily throughout the 1980s and students basically lined up to pay these increasing costs.

The Perceived Value of Higher Education

The American public has always valued education and placed great faith in its educational system. Perhaps more so than in any other society, schools—whether they are elementary, secondary, or postsecondary—are often looked to as problem solvers. And many times the problems that schools are asked to solve would not be defined as educational in other countries.

The expansion of American postsecondary education can be taken as another indicator of the value or importance placed upon schooling. Between 1950 and 1987, the total number of institutions of higher education increased from 1,852 to 3,587. This growth occurred in both the public and private sectors, although the rate of growth was much more rapid for public institutions. More dramatically, enrollments

increased from slightly under 2,300,000 in 1950 to over 12,500,000 in 1987.[4] The overwhelming majority of this increase occurred in public colleges and universities. The United States boasts more institutions of higher education and considerably higher percentages of its population attending college than any other country in the world.

Several polls provide direct evidence of the value placed on higher education by the American public. Between 1978 and 1985, for example, the percentage of Americans believing that a college education is very important jumped from 35 percent to 65 percent.[5]

A more recent survey of American adults conducted in June 1990 revealed that a majority of those surveyed believed that big improvements would be made in a number of different areas if more citizens obtained a college education. Specifically, 75 percent of those interviewed thought there would be big improvements in science, medicine, and technology; 59 percent believed big improvements would result in the U.S.'s ability to compete economically with the rest of the world; and 58 percent indicated that big improvements would occur in solving social problems like crime, drugs, and homelessness.[6]

One would expect people to be more willing to pay for services they view as beneficial than they are to purchase goods or services that they do not consider useful. The widely held beliefs that higher education is increasingly important and that major improvements in a number of areas would result if more people were college educated suggest a potential willingness to invest not only personal dollars in higher education but also tax dollars.

Results from a poll conducted in 1989 provide some insight into why people have been willing to pay higher and higher tuition. Respondents were asked to link what they believed the value of a college education to be to the cost of education. Responses strongly indicated that people believe the cost of higher education to be worth it. Thirty-nine percent of all those polled indicated that the overall value most college graduates get back in their lifetime is worth *more* than they pay for attending college and another 35 percent responded that the overall value returned is about equal to what is paid.[7]

Thus, almost three-quarters of the American adult public believe that the investment in a college education is equal to or worth more than what is returned in a lifetime. When these findings are considered along with the fact that people generally believe that college costs considerably more than it actually does, the impact is even more profound.[8]

The perception that college is worth the investment is supported by several changes in the economy and the workforce. The income differential between high school and college graduates has grown. Recent research suggests that the wage benefits of attending college increased sharply in the 1980s after declining in the 1970s.[9] In the mid-1970s, the income gap between high school and college graduates hovered between 15 and 20 percent. However, in the 1980s, this gap began to widen; by 1986, the income gap for men had grown to 49 percent. This added rate of return

increases the demand for higher education, which in turn allows institutions to raise their prices.

Changes in the workforce also necessitate increases in the percentage of the population needing a college education. Jobs that could be obtained 20 years ago without a college diploma either no longer exist or have been altered significantly in content so that a college education is required.

Thus, the perception that a college education is important and worth the cost is supported by trends in the economy and workforce. However, these general trends do not suggest whether higher tuition purchases additional value. In many ways, this issue is not as central to this argument as is the issue of whether there exists a perception that higher tuition buys increased value.

Essentially, there is a general sense that paying more to attend a college or university buys a student certain "extras." Certainly many college administrators have indicated that they thought this perception to be fairly widespread among the general public in the 1980s. Although his arguments were often taken out of context and consequently misinterpreted, David Breneman, former president of Kalamazoo College in Michigan, was often cited for his notion of "prestige pricing." The popular interpretation of this idea suggests that students and their families believe that they get more when they pay higher tuition. This belief not only permits colleges and universities to raise their price but also encourages them to do so in order to be perceived as "good" as their competitors. Indeed, at the 1988 National Center for Postsecondary Governance and Finance Conference in Washington, Breneman stated: ". . . right or wrong, price is a message to the public of what we are. I do nothing for my college if I am a good citizen and I raise tuition only 5 percent."[10]

Quotations such as this filled newspapers in the mid- to late-1980s. The dean of admissions and financial aid at the University of Chicago in 1987 stated that, "People see our high tuition as an investment in quality."[11] A dean at Mount Holyoke College coined the phrase "Chivas Regal argument." He asserted that students and their families associate quality with price, just as many people associate good scotch with high prices. He stated: "Private colleges say they have little to gain by keeping their tuition and fees much below those of major competitors when they are likely to be perceived not as a bargain but as a lesser institution."[12]

During a period when the Consumer Price Index rose only 38 percent, Mount Holyoke raised its tuition 114 percent in seven years, from $6,820 in 1980 to $14,600 in 1987, with no effects on the numbers of applicants and enrollments.

There is also evidence suggesting that what students and their parents consider quality does cost money. In one of the few studies of its kind, L. H. Litten and A. E. Hall interviewed high school seniors and their parents and asked them what they believed constituted quality in colleges and universities. The four characteristics selected most frequently by parents were:

- high admission rates of graduates who apply to top graduate or professional schools (69 percent);

- faculty spend as much time teaching as on research (39 percent);
- a large variety of courses and programs (26 percent); and
- advanced laboratory equipment and library resources (26 percent).

Students chose these same four characteristics but with somewhat different rankings:

- high admission rates of graduates who apply to top graduate or professional schools (41 percent);
- a large variety of courses and programs (32 percent);
- advanced laboratory equipment and library resources (26 percent); and
- faculty spend as much time teaching as on research (25 percent).[13]

These findings can be interpreted in many different ways. Students and their parents appear to judge quality by attributes that cost money. Thus, colleges and universities can potentially increase their tuition to provide students with this added quality. As Michael O'Keefe responded to a *New York Times* reporter: "Colleges are spending more to provide things that students and their parents want and demand."[14]

The Mount Holyoke example mentioned earlier also exemplifies this notion. The rather steep tuition increases at the school funded additional services and facilities. Colleges and universities generally cannot increase their tuition without offering their students something extra for their money. Although some argue that students and their families interpret tuition levels in and of themselves as a signal of the school's quality, tuition purchases goods and services, albeit a varied lot of goods and services.

Another set of insights can be gained by singling out the most expensive institutions of higher education and comparing them to other schools. A recent paper focusing on such institutions reviewed a number of factors associated with attending these schools. Defined as those colleges and universities with tuition exceeding $10,000 in 1988, the 130 expensive institutions differed from other private colleges and universities on many factors.

- Between 1983 and 1988, tuition at the most expensive institutions increased faster than at other schools. Whereas tuition at expensive institutions increased 52 percent during this five-year period, tuition at less expensive private colleges and universities increased 44 percent.
- Total educational and general expenditures at expensive private schools exceeded $21,000 per student in 1985, while total educational and general expenses were about $11,000 per student at less expensive private schools. The expensive institutions thus spend more on their students than their less expensive counterparts.
- The most expensive schools admit only about 53 percent of their applicants, on average, compared to a 78 percent average acceptance rate for other private colleges and universities and 74 percent for public four-year institutions.

- Eighty-two percent of students at expensive schools expected to obtain a graduate degree, compared to 67 percent of students at other private schools and 52 percent of students at four-year public schools.
- A number of different studies report that students attending higher-priced or "elite" institutions tend to have higher incomes.[15]

Thus, the perception that students get more out of attending higher-priced schools is supported.

A Word About Financial Aid

Up to this point, the discussion of families' willingness to pay what many claim to be excessively high tuition has ignored the role of financial aid in reducing the posted tuition or "sticker price" of college. Some might argue that families are not actually reacting to tuition that institutions charge, because they assume that their children will receive some form of financial aid to offset the total cost of attending the institution.

It is true that tuition trends cannot be examined without concomitant analyses of the "net price" of attending college. Financial aid does help to reduce the cost of college for many students. However, an examination of trends in financial aid and analyses that focus on the concept of net price all conclude that the growth in financial aid has not kept pace with tuition growth. Furthermore, less than half of all students in postsecondary education receive any financial aid at all.[16] Those students who do receive aid rarely receive enough to cover all of their college expenses.

Families still use tuition as their baseline, and not tuition minus potential financial aid.

Conclusion

The title of this paper suggests that a dollar amount that students and families will pay for tuition can be estimated. Instead, a range of thoughts and data have been examined that indicate that students and their parents were willing to pay a considerable amount for a college education in the 1980s.

College tuition in the 1980s cannot be explained by budgetary analyses alone. Explaining rising tuition solely in terms of an institution's need to cover increasing expenditures or decreasing revenues overlooks the central role of higher education in contemporary American society and the value placed upon it. Many interesting social and economic phenomena culminated in the 1980s to make families willing to pay tuition that was higher than any they had paid before.

With over 3,000 institutions, the American higher education system is obviously quite complex. A discussion of tuition increases in the last decade without discussions of financial aid, the many differences between public and private colleges and universities, the growth in community colleges, and the importance placed upon access to college by disadvantaged students is certainly incomplete. However, the

value placed upon higher education did contribute to the increase in tuition.

In the late 1980s, the way students and families viewed college tuition began to change slightly. The acceleration of intense publicity regarding higher education and the beginnings of a tightened economy resulted in tougher public questioning of tuition increases.

The economic conditions in the 1990s are also having their impact. Colleges and universities from Stanford and Columbia to public universities and small regional colleges are all being forced to make major budget cuts. The economy is affecting families in a similar way; higher education institutions cannot recover revenue shortfalls by further raising tuition.

Rising tuition in the 1980s, coupled with the tightening economy in the first years of the 1990s, has turned attention toward making colleges and universities financially and educationally accountable. This move suggests that students and the general public want to assure that they get their "money's worth" out of higher education. This does not mean that they value higher education any less. The value of higher education to individuals and society should remain central to explanations of college tuition.

Notes

1. A. Hauptman, *The College Tuition Spiral* (Washington, DC: American Council on Education and The College Board, 1990); C. Frances, *What Factors Affect College Tuition?: A Guide to the Facts and Issues* (Washington, DC: American Association of State Colleges and Universities, 1990); Rita Kirshstein *et al The Escalating Costs of Higher Education* (Washington, DC: Pelavin Associates, 1990); B. Chaney and E. Farris, *The Finances of Higher Education Institutions* (Rockville, MD: WESTAT, 1990); M. Schenet, *College Costs: Analysis of Trends in Costs and Sources of Support* (Washington, DC: Congressional Research Service 1988); and *Trends in College Tuition and Student Aid Since 1970* (Washington, DC: Congressional Budget Office, Staff Working Papers, 1988).

2. *Trends in Student Aid: 1980 to 1989* (Washington, DC: The College Board, 1989).

3. H. Bowen, *The Costs of Higher Education: How Much Do Colleges and Universities Spend per Student and How Much Should They Spend?* (San Francisco: Jossey-Bass, 1980).

4. *Digest of Education Statistics* (Washington, DC: U.S. Government Printing Office, 1989).

5. E. Fiske, "How Tuition Costs Are Set: An Education in Itself," *New York Times*, May 14, 1987: B13.

6. *Attitudes About American Colleges* (Washington, D.C.: Council for Advancement and Support of Education, 1990).

7. *Attitudes About American Colleges* (Washington, D.C.: Council for Advancement and Support of Education, 1989).

8. *Survey on Participation in Higher Education Among Young People 13-21 Years of Age* (Washington, D.C.: Council for Advancement and Support of Education, 1988).

9. L. Katz and K. Murphy, *Changes in Relative Wages, 1963-1987: Supply and Demand Factors.*

10. David Breneman, former president of Kalamazoo College in Michigan, at the 1988 National Center for Postsecondary Governance and Finance Conference in Washington.

11. Fiske, "How Tuition Costs Are Set."

12. Where did the dean at Mount Holyoke make this statement? In a speech? An article? We need the title and context of this statement.

13. L.H. Litten and A.E. Hall, "In the Eyes of the Beholders: Some Evidence on How High School Students and Their Parents View Quality in College," *Journal of Higher Education*, 60, (**DATE?** 1989): 302-324.

14. Joseph Berger, "College Officials Defend Sharply Rising Tuition," *New York Times* (March 23, 1988): B8.

15. D. Sherman and J. Cohen, *Expensive Private Institutions* (Washington, DC: Pelavin Associates, 1990).

16. *Undergraduate Financing of Postsecondary Education: A Report of the National Postsecondary Student Aid Study* (Washington, DC: National Center for Education Statistics, U.S. Government Printing Office, 1988).

MS. KIRSHSTEIN: There are lots of ways you can interpret these findings, but I find it interesting that students and their parents do appear to judge quality by attributes that cost money. Again, you can find lots of indications of college presidents and association people saying things in the mid-1980s such as colleges are spending more to provide things that students and their parents want and demand.

I will mention briefly a paper that should be coming out fairly soon that was written as a background piece to the final cost report looked at expensive institutions of higher education and it looked at a number of factors associated with attending these schools. Let me just highlight a few of them.

Between 1983 and 1988, tuition at these schools increased faster than tuition at other schools. Total education and general expenditures at private schools exceeded $21,000 per student in 1985, while E&G expenses at less expensive private schools were only $11,000. The most expensive schools admit a smaller percentage of their applicant pool. Eighty-two percent of students at expensive schools expected to obtain a graduate degree, compared to 67 percent at other private schools and 52 percent at public schools. That is the perception that students get more out of attending higher-priced schools and make it worth the cost.

It looks like I have taken too much time. Save any questions that you might have for the end.

College Quality and Tuition: Exploring the Relationships

Jeffrey L. Gilmore, Ph.D.
Office of Educational Research and Improvement
U.S. Department of Education

Rita talked about the demand-oriented theories of tuition and the perceived value of higher education and what people were willing to pay. I was much more interested in trying to come up with some measure of actual value, whether the price that people pay actually results in higher quality.

In the discussions of price and tuition costs and higher education, the focus has been on the price side, why tuition is going up, how much people are paying. As I mentioned earlier this morning, we felt that that was only one side of the story. It wasn't so much a matter of how much things cost, but whether or not what you get out of it is worth what you put into it.

My research was aimed at looking at various measures of quality.

After these remarks, Dr. Gilmore presented his paper, the full text of which follows.

The relationships between the prices colleges charge for tuition and fees and institutional quality are currently of great interest. This is not surprising given the large national investment in higher education, the importance of advanced study in today's changing economy, and the high hopes and expectations placed on postsecondary education by students and their families. Government officials concerned with institutional accountability and anxious parents wondering if they will be able to afford a college education for their children have brought the issue of price-quality relationships to the forefront of public debate.

Two unquestioned assumptions closely associated with the relationship between price and quality operate in American higher education. The first is that the quality of a college or university is reflected in the price it charges for tuition and fees. The second assumption is that colleges and universities have a positive impact on their students. Given the nature of these assumptions, it is surprising to find that few studies have actually explored the relationships between consumer price and institutional quality. Nor have many authors sought to examine the impact of institutional finances on student outcomes. This paper is a summary of a much larger empirical critique of the two unquestioned assumptions introduced above. The full report of the study, *Price and Quality in Higher Education*, is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

The first objective of this study was to examine the relationships between charges for tuition and traditional measures of institutional quality (such as selectivity,

reputation, financial and physical resources, curricular diversity, student-faculty ratios, library holdings, and graduate school placements). A second objective was to test an explanatory model of institutional effectiveness that considers the effects of institutional characteristics, finances, and educational technologies on freshman grades, sophomore retention, and student graduation rates.

Background of the Problem

Until quite recently, when it came to picking a college or university, most people, especially parents searching for a college for their children, believed that the price an institution charged reflected institutional quality. Many parents and students still think this way. Indeed, a Gallup poll found that 38 percent of respondents agreed that "the higher the tuition costs of a college, the better the quality of education a student will receive."[1] However, this attitude is changing. Tuition has been rising faster than the national rate of inflation for nearly a decade, and several well-publicized reports have criticized educational quality.[2] The concern has been raised that the price of a quality college or university education may be beyond the reach of most families, and it appears that bargain-hunting behavior has now become common in decisions about college. Even the popular press has capitalized on this change by publishing several reports and guides for finding educational bargains.[3]

Unfortunately, the debate over rising tuition rates has somewhat obscured the related, and more fundamental, issue addressed by the study of price and quality in higher education: whether or not there is, in fact, a relationship between consumer price and institutional quality. Parents note that costs for private colleges range from $2,245 to $18,990 and costs for public colleges range from $2,694 to $7,464.[4] In addition, popular press rankings of the nation's best institutions reveal extreme variations on several commonly accepted quality factors. For example, average freshman Scholastic Aptitude Test (SAT) scores range from 800 to 1,440 and institutional acceptance rates range from 15 percent to 98 percent. These rankings also indicate a wide range in tuition charges; charges vary even among top-ranked schools from $3,991 to $11,880.[5] Reading these figures, parents and students might well wonder what the best educational investment would be and if the high-priced institutions are worth several times the price of the low-cost colleges.

Methodology of this Study

No one questions that the best colleges are those that have the best students, the best faculty, and all the money required to provide the best educational environment and facilities. The real question is whether or not institutions produce outcomes that are commensurate with their costs.[6] Although a number of definitions of institutional quality have been advanced, the one with arguably the most credence holds that the highest-quality institutions are those that affect the greatest positive intellectual and developmental change in their students and have the strongest impact on postgraduation student outcomes.

Data Sources

Data for this study were drawn from the U.S. Department of Education's HEGIS surveys, The College Board's Annual Survey of Colleges, and Barron's Educational Services.[7] Data from all sources are for the 1985-86 academic year.

Sample

The institutions used in this study were private, general baccalaureate institutions, defined as:

> Institutions characterized by their primary emphasis on general undergraduate, baccalaureate-level education. They are not significantly engaged in postbaccalaureate education. Included are institutions not considered as specialized and those in which the number of post-baccalaureate degrees granted is less than 30 or in which fewer than 3 postbaccalaureate level programs are offered and which either (a) grant baccalaureate degrees in 3 or more program areas, or (b) offer a baccalaureate program in interdisciplinary studies.[8]

There are 593 (unduplicated) private, general baccalaureate institutions in the 1985-86 HEGIS data, and the entire universe of these institutions was used in the study. While these institutions have enrollments ranging from 83 to 8,731 students, 50 percent fall into a range of 750 to 1,750 students and 85 percent fall between 250 and 2,250 students. This homogeneity of the sample helps control the effects of institutional size on student outcomes. Utilizing this sample of institutions also reduces possible objections to employing performance toward the goals of freshmen academic achievement, sophomore retention, and degree completion rates as the criteria for effectiveness. General baccalaureate institutions emphasize the teaching function of higher education institutions and, by definition, focus on the undergraduate student. Thus, they have characteristics, constituencies, and goals that are more similar than dissimilar.

Variables Used in the Study

The variables used in this study were selected on the basis of three criteria: consistency with a conceptual framework built upon Vincent Tinto's student integration theory and Alexander Astin's Input-Environment-Output model; consistency with the related research; and availability in national data sets.[9] The list of variables is presented in Figure 1. Details on the derivation of these variables are available from the author.

Findings and Discussion

Part One

The first two research questions in the study were designed to address the issue of whether or not the quality of a college is reflected in the price it charges for tuition and fees.

PRICE-QUALITY CORRELATIONS. The first research question asked, "Is there a significant correlation between consumer price and such indicators of institutional quality as resources, reputation, selectivity, and student outcomes?" To answer that question, correlations were run between the variables for price and quality. **Consumer Price** was found to be positively and significantly correlated with all but two of the 29 variables representing institutional quality. The exceptions were **Faculty/Student Ratio**, which was not correlated with price, and **Remedial Programs**, which was negatively correlated.

A detailed examination of these correlations reveals several important relationships. Twenty of 22 correlations showed moderate-to-strong positive correlations between price and resources. **Consumer Price** and **Reputation** (which is a measure of an institution's intangible quality dimension) were strongly and positively correlated. This indicates that higher-priced institutions have a better reputation than lower-priced institutions, and may indicate that students and their parents perceive higher-cost institutions as having better quality or as delivering a greater personal return (or value, however families may define it) for their college tuition dollar and time investment. The correlation matrix also showed the relationship between **Consumer Price** and **Student Ability**. Certainly, the quality of an institution's educational program is affected by the quality of its student body. The correlation between **Consumer Price** and **Student Ability** was the strongest relationship of all. This indicates that better students tend to go to higher-priced institutions, or that high-cost schools attract the best students. **Consumer Price** was also strongly and positively correlated with all five student outcomes variables. This indicates that the higher-priced institutions have better performance in regards to student educational outcomes than do lower-priced institutions. However, since it was demonstrated that higher-priced institutions attracted better students, it could not be determined from these findings alone whether the better performance of higher-cost institutions was due to what they do with their greater resources, or to the fact that they have better students to begin with who naturally do better and have better outcomes.

PATTERNS AND CHARACTERISTICS. Although the correlations estimated overall effects, it was hypothesized that there could be variations within these general patterns and trends. The second research question asked, "Do all colleges follow a similar pattern with respect to consumer price and indicators of institutional quality, and if not, what institutional characteristics might account for or explain counter patterns?" In order to answer that question, two separate approaches were taken to explore performance patterns and institutional characteristics.

A plot showing the relationship between **Consumer Price** and **Educational Progress** indicated that higher-priced institutions generally performed better with respect to **Educational Progress** and their quality was fairly uniform (see Figure 2). On the other hand, within each price class there was a wide range of institutional performance. Thirty-one percent of the institutions ran counter to expectations, with some of the lower-priced colleges outperforming some of the higher-priced colleges, and some of the higher-priced colleges showing poor performance. A close examination reveals that each of the 57 institutions charging $8,000 or more had **Educational Progress** scores above the mean for all institutions, while few institutions (only 24 out of 127) charging $4,000 or less performed above the mean. However, within the group of institutions charging $8,000 and above, scores on **Educational Progress** ranged from just above the mean to more than 2 standard deviations above the mean. Even wider scores were evident for the less expensive institutions. These findings seem to support two rather contradictory economic assumptions. That is, though "you get what you pay for" one could also conclude that "it pays to shop around."

In order to explore the characteristics of institutions performing with, and counter to, the general price-quality trends in more detail, the sample of institutions was divided into four groups: (1) low-cost, low student educational outcomes; (2) low-cost, high outcomes; (3) high-cost, low outcomes; and (4) high-cost, high outcomes. Simple descriptive statistics were generated for the institutional and student characteristics variables for each group.

The 157 institutions in the low-cost, low outcomes group (Group 1), as well as the 187 in the high-cost, high outcomes group (Group 4), represented the expected pattern. That is, those institutions costing the least were expected to have fewer resources and to be less effective in terms of student outcomes, whereas those costing the most were expected to have greater resources and be more effective, and indeed such is the case. On the other hand, the 94 institutions with high price but low outcomes (Group 3) and the 64 low-price, high outcomes institutions (Group 2) ran counter to this conventional wisdom, and they hold the greatest interest.

Comparing the two countertrend groups directly (Group 2, low cost/high outcome and Group 3, high cost/low outcome) revealed the most interesting findings. In spite of the fact that Group 3 institutions were larger (1,213 versus 1,061 students) and charged significantly more for tuition and fees than Group 2 institutions ($5,711 versus $4,019), **Revenue per Student** ($9,044 versus $8,476) and **Expenditures per Student** ($8,916 versus $8,446) were not significantly different for the two groups of institutions. This can be explained by the fact that average **Endowment Value** was considerably less at Group 3 institutions than at Group 2 institutions ($6 million as compared to $7.5 million). This means that Group 3 institutions had small endowments for their size (and possibly also comparatively small gift, grant, and other revenues), and that tuition has been set relatively high in order to provide the same level of expenditures as Group 2 institutions.

These findings are reflected by the fact that students at Group 3 institutions must bear 64 percent of their educational costs (**Consumer Price** divided by **Expenditures**

per Student) compared to only 47.6 percent for students at Group 2 institutions, and by the fact that the aid gap (**Consumer Price** minus **Aid per Aided Student**) for students on aid at Group 3 institutions was $2,308 versus $1,603 for students at institutions in Group 2. These findings suggest one possible basis for the apparent differences between the four institutional groups. That is, the higher tuition and fees at the most expensive colleges, even with increased student financial aid, are still out of reach for less-affluent students. Students who must live at home and commute, or go to school part-time while working, cannot afford the more expensive schools. Older students (perhaps financially independent) and students from minority backgrounds also have a more difficult time affording high tuition and so tend to congregate in the less-expensive colleges. These colleges, in turn, not only have less revenues to spend on quality improvements generally, but they must spend a larger amount of their limited resources providing more remedial services. If the student cost burden and aid gap contribute to student attrition, as they might, then these two factors would help explain why Group 3 institutions had such low student outcome scores, especially considering the fact that they had almost the same amount of at-risk students as Group 2 institutions, and the fact that the ability level of their students was higher than for institutions in either Group 1 or Group 2.

Factors other than the student cost burden and aid gap could be behind the low student outcome score for Group 3 institutions. To explore that possibility, the mean values for the academic resources and student services variables were also examined. The results indicate that there were no significant differences between the institutions in Group 2 and Group 3 for these variables, with only three exceptions. Group 3 institutions had a slightly greater number of enrichment programs and student housing types than Group 2 institutions. However, institutions in Group 3 had fewer library volumes than those in Group 2. Although not representing statistically significant differences, Group 3 institutions had **Buildings Value** and **Equipment Value** that were $2.1 million higher than Group 2 institutions, but they also had 33 percent fewer **Library Journals**.

It appears that Group 3 institutions, as compared to institutions in Group 2, used their greater total revenues more for physical resources than for library resources. The fact that they had lower scores on the student outcomes variables as well may indicate that such a resource allocation strategy was not the most effective in terms of educational quality. On the other hand, Group 3 institutions had an **Application Rate** that was 10 percentage points higher than Group 2 institutions. This may indicate that prospective students perceive Group 3 institutions as having higher quality than Group 2 institutions on the basis of price alone, or perhaps the more extensive physical plants at Group 3 institutions impress prospective students who visit those campuses. So, from a student recruitment perspective, a strategy of charging a high price coupled with a resource allocation pattern favoring physical appearances seems, by itself, to be effective in terms of generating a positive reputation.

Part Two

The last two research questions were designed to address the issue of institutional effectiveness and impact on student academic outcomes. Working from educational theory and past research on the impact of colleges on student outcomes, 20 key variables were selected for analysis by multiple regression and path analytic techniques.

INSTITUTIONAL EFFECTIVENESS. The third research question asked, "To what degree do consumer price, student ability, and institutional variables representing the components of the educational process explain institutional effectiveness as defined by performance on student educational progress?" This question was answered through multiple regression analyses using the variables in a general empirical model in three stages.

The primary findings were as follows. Over 60 percent of the variation in **Educational Progress** was explained by the other 19 variables in the model. Analyses reveal that the largest effects appeared to come from institutional decisions setting tuition levels, admissions standards, and institutional size (**Consumer Price**, **Student Ability**, and **Institutional Size** alone accounted for 47 percent of the institutional score on **Educational Progress**). An additional 8 percentage points came from **At-Risk Students** and **Total Revenues**. Six percentage points come from 14 variables representing components of the educational process. This small but significant impact of educational factors on student outcomes was consistent with several earlier studies by Donald Thistlethwaite, Alexander Astin, R.C. Nichols, E. L. Wegner and W. H. Sewell, and others.[10]

When the effects of individual variables were examined, some additional findings that are very interesting came to light. The results seemed to indicate that the percentage of at-risk students at an institution has an effect on student outcomes over and above the effect of general student ability levels, since both the **Student Ability** and **At-Risk Students** variables were in the regression model, and yet both remained large and significant. In other words, even after controlling for incoming student ability, students in at-risk categories seemed to have poorer educational progress than others. **Consumer Price** also remained significant even after controlling for the effects of other factors. This indicates that price alone, regardless of its contribution to total revenues, is a factor in student outcomes. These results suggest that Leon Festinger's cognitive dissonance theory may be operating in student persistence decisions.[11] That is, student goal achievement (for example, graduation) may be at least partially explained by the amount of investment (money, in this case) put into it. These results could also indicate that students attending higher-cost institutions are more motivated toward the goal of graduation (independent of student ability) than students at other institutions. It is surprising that **Faculty/Student Ratio** was not a significant factor in student progression to a baccalaureate degree, especially given the emphasis placed on student-faculty ratios by college guidebooks and research studies. Perhaps in-class interactions are not the most important element. Rather, the key may be the unmeasurable out-of-class interactions, the frequency of which may not be determined

by class ratios but by faculty dedication, commitment, teaching loads, and availability.

This suggests that some cost savings could be realized (without sacrificing quality) by increasing class size slightly. Of course, other less desirable consequences could also result from such action. Consideration must be given to findings by Alexander Astin that faculty-student ratios were a significant factor in Ph.D. production, and studies by R. T. Hartnett and R. H. McGuckin and D. R. Winkler that found test scores to be closely related to class size.[12]

Another interesting discovery in these results is the finding that **Remedial Programs** continued to be a negative factor even after controlling for **Student Ability** and **At-Risk Students**. Rather than indicating a failure of such programs, **Remedial Programs** may be an indicator of large, poorly funded, nonselective institutions serving a diverse student body and providing a large number of academic, enrichment, and remedial programs. Such institutions would seem to have characteristics more in common with public comprehensive colleges, and some of the same ills. Past research has indicated that smaller colleges with a clear and rigorously pursued mission have a much greater and positive impact on their students than larger institutions attempting to be "all things to all people," as appears to be the case here.

Although a higher percentage of full-time faculty at an institution was found to be correlated with better student retention and educational progress, the regression analyses indicated that after controlling for financial resources and student characteristics the net additional contribution of full-time faculty to student educational progress not only disappeared, but became significantly negative! To discover why this may be so, more analyses were conducted. The institutions were divided into two groups based on high and low halves of student SAT scores, and then the regression model was rerun for each group. These new results revealed that **Percent Full-Time Faculty** was a significant (but negative) factor at institutions with lower-ability students, but was *not* a significant factor at institutions with higher-ability students. Moreover, with the exception of **At-Risk Students** (which was a significant factor in both groups), a different set of variables explained **Educational Progress** for the high- and low-ability groups. In addition, it was found that schools having more full-time faculty also had a greater percentage of faculty with Ph.D.s (55 percent versus 45 percent), and **Expenditures per Student** that were $2,900 higher.

What does all this mean? Perhaps institutions with a large percentage of full-time faculty are imbued with the "faculty research culture" more typical of Ph.D.-granting institutions. And while this may be just the right atmosphere for financially secure colleges filled with bright full-time and on-campus students whose plans most surely include graduate study, it may not work so well at institutions with a less traditional student body and fewer resources. Again, the message comes through that one approach to providing a higher education may not be appropriate to all students, and that clarity of mission along with a concomitant allocation of resources and programs may be the best way to meet the educational needs of a diverse nation.

INSTITUTIONAL IMPACT ON STUDENT OUTCOMES. The final question attempted to measure institutional impact on student outcomes and the independent contribution

of significant factors using a path analytic approach. Question four asked, "What are the significant direct, indirect, and total effects of consumer price, student ability, and institutional characteristics on educational progress?" Before proceeding with analysis, seven statistically insignificant variables in the general empirical model were eliminated from further consideration. A new reduced empirical model resulted, which was used in the subsequent analyses.

A comparison of the reduced form with the general form of the empirical model revealed only a slight reduction in overall performance. Evaluation of the reduced empirical model using the structural equations of path analysis yielded correlation coefficients and standardized regression coefficients, which were used to construct a path diagram of the model. Although this path diagram was quite interesting, there were still too many variables and insignificant paths in the model to make analysis meaningful. The model needed to be "trimmed" before calculation of indirect and total effects could proceed, and substantive meaning ascribed to the results. This trimming was done in a series of steps wherein nonsignificant paths were eliminated and the structural equations were rerun in successive iterations until only significant paths were retained. To further aid analysis and interpretation, only those variables with direct paths to **Educational Progress** were retained for the final analysis. By eliminating "dead-end" variables, the primary empirical determinates of **Educational Progress** could be clearly represented and the indirect and total effects of these significant factors could be readily calculated.

This last path diagram was used to calculate direct, indirect, and total effects for each of the variables in the final model. Once the indirect effects of an independent variable (as expressed through any intervening variables) are taken into account, the total effect of that variable may be quite different than its unmediated direct causal effect. For example, the negative direct effect of **Institutional Size** was almost completely offset by the sum of its positive indirect effects. Much of the past research and literature on student persistence and retention has focused on the negative impact that larger institutional size has on student academic progress. However, when financial variables were added to the study and indirect effects were examined, a very different picture emerged. This is largely due to the mediating influence of increased revenues, which larger size generally brings.

Computation of total effects for the other variables indicated that **Student Ability** had the strongest effect, followed closely by **Consumer Price** and **Total Revenues**. Other significant variables were **Enrichment Programs** and **Activity Programs**. Significant negative effects were from **At-Risk Students**, **Percent Full-Time Faculty**, and **Student Housing**.

The effects of the price charged for tuition and fees on institutional quality was the first issue raised in this study. The final model and the calculation of effects provide further insight into this question. **Consumer Price** exerted a direct, positive, and significant effect on **Educational Progress** independently of any other factor. This would seem to support the hypothesized workings of Leon Festinger's cognitive dissonance theory in student educational achievement.[13] That is, not only do many students seem to judge institutional quality on the basis of price, but the very

payment of that price apparently represents a psychological investment and commitment to the institution. The higher the price, the stronger the commitment must be (in order for the student not to feel that he or she has made the mistake of a bad investment). **Consumer Price** also has a number of indirect effects on **Educational Progress**, which were expressed through the mediating influence of **At-Risk Students**, **Total Revenues**, and **Enrichment Programs**. The path through **Enrichment Programs** may indicate that student tuition dollars more directly support such programs than do revenues from other sources. However, it may be that high-ability consumers demand or select large, high-cost institutions in part precisely because they offer more enrichment programs, and institutions respond to such market pressures in kind.

Student Ability, as might be expected, exerted the strongest total influence on **Educational Progress**. It had direct and indirect effects primarily through the mediation of **At-Risk Students**. Both tuition charges and institutional selectivity had a negative effect on the percentage of at-risk students enrolled at an institution. In turn, the lower the percentage of at-risk students an institution has, the higher its performance on student retention and graduation rates. **Student Ability** also had a curious direct effect on **Total Revenues**. Although **Consumer Price** and **Student Ability** were strongly correlated, a direct effect for **Student Ability** on **Total Revenues** remained net of the effect of **Consumer Price** on **Total Revenues**. One possible explanation for this is that highly selective institutions are able to generate greater nontuition revenues (perhaps from more successful alumni or from corporate inclinations to make larger donations to those institutions perceived to be of higher quality, such as those having higher average student test scores).

Total Revenues exerted a direct, positive effect on **Educational Progress**. This is not surprising. Greater institutional revenues enable greater expenditures, which would presumably result in a better academic and social environment and, thus, greater student persistence. The fact that a direct effect remained after controlling for the effects of the other variables in the model suggests that the influence of money is expressed through factors not represented by the model (perhaps through such things as the quality of the physical plant, the beauty of the campus buildings and grounds, the richness of the interior furnishing, and the presence of desired facilities and amenities).

At-Risk Students exerted a strong (negative) direct influence on **Educational Progress**. In fact, the direct path from **At-Risk Students** was the most robust of all the direct effects on **Educational Progress**. The most important finding here is that **At-Risk Students** exerted this influence even after controlling for student ability. This would seem to indicate that at-risk students are not necessarily at risk just because they are underprepared. Older, part-time, and minority students show less educational progress even when their ability level is the same as traditional students. This suggests that institutional factors may play a more important role than thought in the retention and graduation rates of at-risk students. Such a conclusion is consistent with previous research, and it has implications for both institutional administrators and students falling into at-risk categories.

Summary

This study provides some useful and important findings for family decisions about college attendance and costs, for improving institutional practice, and for policy makers as they deal with questions about quality and accountability in higher education.

Because it has been determined that higher prices are indeed strongly associated with greater quality, students and parents are generally justified in judging institutional quality on the basis of price, and high-priced colleges can more easily defend their tuition levels. Furthermore, since it has been demonstrated that higher prices result in richer collegiate environments, which in turn translate into greater institutional effectiveness toward achieving desired student outcomes, consumers can begin to get a sense of the net value of the educational dollar. On the other hand, it has also been shown that within each performance quartile there is a wide range of institutional prices. In short, although you do get what you pay for, it also pays to shop around. Consumers would be well advised to inquire into an institution's total financial picture and its performance on student outcomes before drawing any conclusions about educational value.

This study has important implications for campus policy makers and administrators. Much past thinking has focused on what the student can do to adapt to the institution. This study highlights the importance of knowing what institutions can do to adapt to students. The results caution administrators that not all academic characteristics are beneficial at all colleges. To be most effective, institutions need to recognize that high-ability and low-ability students may require different environments and programmatic approaches. Without such an awareness, the institutional impact may be positive for the best students, and negative for those students who are least prepared. In addition, it should be understood that the specific institutional elements identified as being determinate of, or detriments to, desired student outcomes can be modified, augmented, or otherwise taken into consideration as an institution aligns its policies and resources toward fulfilling its mission. In short, the emphasis of this study was on things under administrative or faculty control: things that can be changed, not inexplicable phenomena. The conscious choices regarding, for example, optimal class size, preferred faculty qualifications, type of student housing, the number of library holdings, or the diversity of student services to be provided influence the achievement of ultimate educational objectives.

Government policy makers might also find these results worth taking into consideration, especially in terms of measuring institutional performance and accountability. There are several ways policy makers can realign programs and reallocate resources to raise performance levels and reduce costs. Primary among them is the development and articulation of a clear vision of institutional mission. Knowing what business the institution is in (that is, research or teaching) and who its clients are (for example, graduate school-bound overachievers or disadvantaged students seeking a better life) provides leaders with the reference points necessary for making critical decisions about such things as program diversity, the allocation of

resources, and assessment criteria. Mission statements that embody a working consensus of institutional purpose rather than banal treaties between warring factions become the basis for strategic plans and operational action. A clear vision of an institution's purpose can allow its various constituencies to accept a future orientation that realizes that "less is more" in some cases, that a concentrated focus can be more effective than a broad sweep, and that growth by substitution can be a viable alternative to growth by accretion. Adoption of such a view can help break what William F. Massy calls the "add-on spiral," which is the continued layering of program on program and cost on cost.[14] However, the fact that many students and their families do seem to be influenced by a college's physical appearance and price tag may lend support (for better or worse) to the decisions made at some campuses to raise tuition prices higher than the inflation rate. Such a strategy not only seems to be effective for recruitment, it also pays off in actual revenue enhancements.

In sum, the results confirm the impression that the richest colleges have the best students and faculty, the most resources, and the most diverse student-oriented facilities, programs, and services. The flip side to this finding is, of course, the fact that the colleges with the lowest tuition rates attract the least-qualified students whose attendance patterns put them at even greater risk of dropping out, while at the same time, these same colleges (with the most needy students) have the fewest resources with which to address such problems.

Notes

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12. Alexander W. Astin, "'Productivity' of Undergraduate Institutions," *Science* 136 (April 1962): 129-35; R.T. Hartnett, "Departments Within Colleges Differ in Impact," *Findings* 3 (1976): 5-8; and R.H. McGuckin and D.R. Winkler, "University Resources in the Production of Education," *Review of Economics and Statistics* (May 1979): 242-48.

13. Festinger, *Theory of Cognitive Dissonance*.

14. William F. Massy, "A Strategy for Productivity Improvement in College and University Academic Departments," presented at the Governance Forum sponsored by the National Center for Postsecondary Governance and Finance, Santa Fe, NM, Oct. 31, 1989.

DR. GILMORE: Rita mentioned David Brennerman when he was at Kalamazoo and she also mentioned Mount Holyoke. How did those two colleges come out in all this? Since they didn't do too badly, I will show how they work.

Mount Holyoke is one of the most expensive, not the most expensive, but it is the one that has the very best overall performance of the nearly 600 colleges in this group. Its value index was "1." That is, it is very high priced, but it delivers an equal value to the student.

Kalamazoo was in the moderate range of price, a little more expensive than the mean, but it performed better than the mean. And it had a value index of "1" as well.

The good news is, in general, you do get what you pay for. The higher-cost colleges do provide better facilities, services, faculty/student ratios, libraries, books, student outcomes, graduate school going rates, you name it.

The bad news—or maybe the good news, depending on your outlook—is that it

pays to shop around, that there are some colleges that are low cost that can provide you with that Chivas Regal education and there are some high cost colleges that don't quite deliver . . .

The lesson here is, that charging a higher tuition rate not only will generate some added revenues in real terms, but it will also convey to the consumers that it is a better institution. You can't fool everybody all of the time, but if you can get away with it for a few years, it might actually work.

With the Department of Education, I guess I am not supposed to encourage you all to raise your tuition rates, but it seems to be a strategy that some colleges are pursuing. People say that this is because colleges are trying to market their position, trying to go into new markets, and positioning themselves and that is fine. I don't think any college is out to hurt anybody, but some of these colleges just aren't making it . . .

Echoing some of the comments that we heard earlier, perhaps institutions need to look at what their mission is, who they are trying to serve, the graduate school-bound overachievers or the disadvantaged students that are struggling academically, and gear their programs and faculty toward those ends.

We will take questions, I hope, afterwards.

Figure 1. Variables Used in the Study

VARIABLE (N)	DESCRIPTION
Exogenous Variables	
Consumer Price (585)	Published charges for undergraduate tuition and fees.
Total Financial Aid (585)	Dollar amount of aid (grant, loans, work) disbursed to undergraduates.
Net Price (561)	Consumer Price minus average student aid (grant, loans, work) per FTE undergraduate.
Aid per Aided Student (562)	Average amount of financial aid distributed to each undergraduate student on aid.
Institutional Size (585)	Total full-time and part-time undergraduate headcount enrollment.
Student Ability (573)	Median freshman SAT scores (or ACT scores converted to SAT equivalents).
Stage One Endogenous Variables	
Total Revenues (593)	Total current funds revenues.
Revenues per Student (585)	Total revenues divided by total headcount enrollment.
E & G Expenditures (593)	Educational and general expenditures and mandatory transfers.
Total Expenditures (593)	Total current funds expenditures and mandatory transfers.
Expenditures/Student (585)	Total expenditures divided by total headcount enrollment.
Endowment Value (593)	Dollar amount of endowment assets for the fiscal year (market value).
Land Value (593)	Dollar amount of land value at end of fiscal year (book value).
Buildings Value (593)	Dollar amount of buildings value at the end of the fiscal year (book value).
Equipment Value (593)	Dollar amount of equipment value at the end of the fiscal year (book value).
Percent Minority (530)	Percentage of undergraduates who are minority students.
Percent Part-Time (585)	Percentage of undergraduates who are part-time students.
Age Of Students (496)	The average age of undergraduate students.
Percent On Aid (562)	Percentage of undergraduate students receiving financial aid.
Percent Commuters (540)	Percentage of undergraduates who commute.
At-Risk Students (459)	Sum of standardized scores for Percent Minority, Percent on Aid, Age of Students, and Percent Part-Time.
Stage Two Endogenous Variables	
Percent Faculty PhD (525)	Percentage of full-time faculty holding doctoral degrees.
Percent F-T Faculty (528)	Percentage of full-time faculty.
Faculty/Student Ratio (561)	The FTE faculty-student ratio.
Enrichment Programs (585)	Number of special academic enrichment programs offered (24 possible).
Remedial Programs (585)	Number of remedial services available (9 possible).
Library Books (585)	Number of library title holdings.
Library Journals (585)	Number of library periodical subscriptions.
Curricular Diversity (585)	Number of different academic majors offered (534 possible).
Activity Programs (585)	Number of student activity programs available (21 possible).
Athletic Programs (585)	Number of different athletic sports programs available (35 possible).
Athletic Facilities (585)	Number of different types of athletic facilities available (10 possible).
Student Housing (585)	Number of different housing types available (16 possible).
Student Services (585)	Number of student services available (22 possible).
ROTC Programs (585)	Number of military training programs available (4 possible).
Outcomes Variables	
Freshman GPA (566)	Percentage of freshmen who complete the year in good standing.
Soph Retention (509)	Percentage of freshmen who return for the sophomore year.
Graduation Rate (585)	Number of bachelor's degrees conferred divided by total headcount undergraduate enrollment.
Grad School Rate (312)	Percentage of graduates (with BA degrees) who enter graduate school.
Reputation (585)	Number of applications for admission received adjusted for institutional size.
Educational Progress (503)	Sum of standardized scores for Freshman GPA, Soph Retention, and Graduation Rate.

Figure 2. Plot of Consumer Price with Educational Progress

Tuition Discounting

Sean C. Rush
Coopers & Lybrand

Good morning. I would like to talk about a paper that we are about two-thirds of the way through. We are working on it with NACUBO and before I begin the presentation, I would like to acknowledge Loren Loomis Hubbell, my colleague. Her good cheer and hard work are behind the presentation I am about to make.

I would like, at the outset, to create a context. You needn't look at the detail of the slide. Just focus on the colors, the pink being increases in tuition prices between 1980 and 1985 and the green being increases in various measures of family income during that same period (see figure entitled "Growth in Tuition Rates Compared with Family Resources, 1980-1985). The colors tell you that during that period the increases in price exceeded that of various measures of family income.

Another factor is wide price diversity among colleges and universities in this country. As Rita mentioned earlier, many families overestimate what it will require to attend college. The factor to keep note of is that approximately 80 percent of all students in this country attend an institution where the tuition is $2,000 or less. At least that is 1988 dollars. While parents and students tend to focus on the higher-priced institutions and that is what gets ballyhooed in the media each year, less than one-half of 1 percent of all students attend an institution where the total cost of attendance is more than $17,000.

Looking at changes in financial aid, there has been a shift from federally funded grant programs over the last 20 years or so. You can see a rapid increase in the amount of institutionally funded grant aid that is provided to students to meet needs between 1970 and 1987. As tuition growth has exceeded the ability to pay, as well as the various grant programs, institutions have stepped into the breech to meet that need.

Looking at the various federally funded programs, you can see a nominal decline of 10 percent and a real decline of 45 percent in grant programs, increases in loans, a real decline in work study, and sharp increases in state and institutionally funded aid. Between 1980 and 1990, institutionally funded aid grew by 178 percent in nominal dollars and nearly 70 percent in real terms.

How do institutions offer financial aid? There are several ways. There is need-based aid, filling the gap that is not met by loans in other programs. There are merit scholarships that an institution might use to attract academically gifted students or others they would like to have in their student body.

Other non-need-based scholarships might be athletic programs or other types of programs to which the school offers scholarships to students. These represent waivers

of tuition room and board. I would call it a discount on revenues. The important concept, at least from our perspective, is that one other way to look at financial aid is not to look at it as cost but as an offset of revenues. The best way to look at this might be to look at hospital financial statements briefly.

If you have ever seen a hospital financial statement, at the top it says gross patient service revenues. Immediately below is an adjustment or an allowance for contractual adjustments, free care, bad debt, and then there is net patient service revenues. It is that line that represents the revenue stream of that particular hospital. A similar phenomenon, if you were to portray it that way in a college or university, would get you to net tuition.

Since 1970, there has been an increasing trend in the number of students receiving institutionally funded aid. Back in 1970, they represented about 44 percent of all students at independent institutions and by 1988, it had grown to nearly 60 percent. These data are drawn from the National Association of Independent Colleges and Universities' study, *Commitment to Access*.

We have a couple of examples of how this trend has affected two institutions that were our clients. These are both small colleges, but they represent dramatic examples. At one institution, until about 1983 or 1984, the level of discounting at one institution was relatively stable. Something happened in 1984. Enrollments declined and you can see a wider gap between gross tuition and net tuition. The difference between gross tuition and the amount of institutionally funded aid began to widen. The school started playing the marginal revenue, marginal cost game, to increase its enrollments or at least maintain them.

About 1987, the board relaxed a little bit. It felt more comfortable because it had arrested the decline in gross tuition revenue; in fact, tuition revenue had begun to go up. But if you look at the amount of institutionally funded aid that was being provided to students, you can see that it was still going down, perhaps not as sharply as it had been, but there still was a decline.

This particular institution is nearly bankrupt at this point in time. It had drawn down heavily on reserves to fund the gap that was being created. It may be a matter of months or perhaps a year before the institution will have to fold.

Another example is an institution we worked with about a year ago. In 1987, gross tuition revenue at this institution was about $9 million and the total full-time equivalent students was approximately 900. The school was at about 50 percent of its capacity from 10 years earlier. There had been a steady decline in the number of students.

Between 1987 and 1988, the school brought in a new president who adopted a "bet the farm" kind of strategy. He decided to eliminate a certain amount of financial aid. In fact, he took out $700,000. His gamble was that by taking it away, he would probably decrease enrollments because fewer students could afford to come. That is, in fact, what happened; 825 students showed up as opposed to 900. But the number of paying students was 640, up from 630 the prior year, and the number of free heads

on a full-time equivalent basis declined from 270 to 185. Despite a decline in gross tuition revenue and in enrollment, the tuition revenues went up by approximately $610,000.

We created a hypothetical institution for the paper: call it XYZ. This institution has approximately 4,000 students; a 1990 tuition of $7,000; and total nontuition student budget of approximately $3,000. We assumed the expected family contributions would be distributed uniformly from zero to $25,000 during that year and that the various grant, work study, and loan programs for 1990 would be $300,000. For purposes of the analysis, we assumed that these programs would increase at 1 percent each year. The college is 75 percent tuition dependent and there were 25 students receiving full merit scholarships during that period.

We attempted to look at several different things. We looked at various increases in the cost of attendance, 10, 9, 8 percent, and tried to measure those against changes in family income and family ability to pay and tried to calculate the amount of need that would be created under those various scenarios.

A 10 percent increase in the cost of attendance, with a 5 percent increase in aggregate student resources, creates 15.2 percent need. We looked at the various levels of need created by changes in the cost of attendance and the impact that it would have on institutionally funded financial aid.

(At this point, Mr. Rush is referring to the two figures entitled "Funding Sources for the Cost of Attendance by Family Resource Level.") On this slide, if you draw a line up from the $10,000 point on the X axis, it would come straight up to the lower portion of that orange bar that is going diagonally across the diagram. Everybody to the left of that line is receiving some mix of financial aid, be they loans or institutionally funded aid, Pell awards or other Title IV aid. Everybody to the right of that is paying full price. If the cost of attendance increases by $3,000 versus $10,000, you can see a dramatic increase in the amount of institutionally funded aid that is required to fill the same size student body.

This represents a charitable contribution to the institution: for all of the students or the families of students who are paying the full price to that institution, $3,500 out of the $13,000 bill is subsidizing students who could not afford to pay the full price. Perhaps only $9,500 in tuition should be charged to those students and a required $3,500 charitable contribution should be made to the institution, so at least the tax deductibility of what they are doing could be had.

Let's look at annual increases in student need over a 10-year period. If student need increases by 9 percent, you can see the various impacts on institutionally funded financial aid. We assumed that 100 percent of need is being met, and then we made the assumption or created a hypothetical policy whereby only 90 percent of need would be met in year one. So, for the student with zero ability to pay, he or she would still be required, if the tuition were $10,000, to pay $1,000 in that year.

The institution could say that is fixed, so that each year you only have to pay $1,000 regardless of how tuition increases. Under that scenario, in the second year, if

the cost of attendance increases by 10 percent, the institution is actually meeting 91 percent of those students' needs.

There is another way to look at the gross tuition and discounting phenomenon. The assumption made is that tuition and nontuition charges grow at approximately 10 percent. Aggregate student resources are growing at the rates indicated and that this XYZ institution is meeting 100 percent of need. The gross tuition between 1990 and 2000 would grow from approximately $29 or $30 million to $74 million. As student resources grow at 8 percent, the institution would realize on a net basis only $54 million and a 4 percent increase in student resources would realize only $44 million, a $30 million gap between gross and net tuition.

Looking at it in a slightly different way, in 1990 the institution is retaining approximately 87 percent of gross tuition revenues or 87 percent of the stated price. By 2000, with an average growth in student resources of 4 percent, the institution is receiving only 60 cents on every dollar of stated tuition; it is giving a 40 percent discount, compared to a 13 percent discount 10 years earlier. You can begin to see the rapidity with which this can affect an institution.

Let's look at various institutional factors on net and gross tuition, focusing on cost growth and growth in nontuition revenue sources. The assumptions are that student resources grow at 5 percent per annum and the institution is 75 percent tuition dependent.

If costs at the institution increase by 10 percent and nontuition revenue growth equals 9 percent, the net tuition required to balance the budget or to achieve some financial equilibrium is 10.4 percent. That is the rate of increase in tuition required. To generate 10.4 percent in net tuition revenue, gross tuition or the stated tuition price would have to increase at 13.8 percent. And, again, it plays out varying assumptions on cost growth as well as nontuition revenue growth.

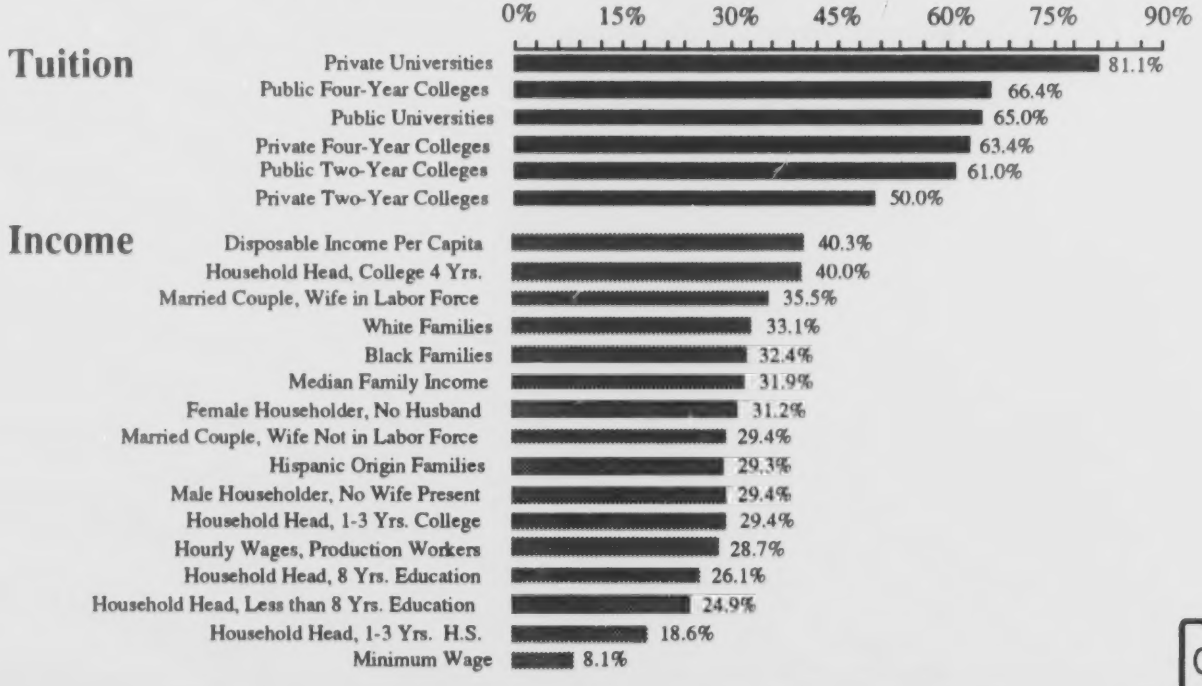
In conclusion, discounting is a large and growing phenomenon in many institutions. We are not suggesting that discounting is a bad practice. It provides access to many students who otherwise would not be able to attend an institution; it enables some institutions to hold share as long as they are aware of the marginal revenue and marginal cost impacts of what they are doing.

Tuition rates and discounting will continue to go up as costs grow, as increases in historical stated tuition rates outpace the growth in student resources. You basically begin to get into a geometric spiral in this phenomenon: as various externally funded sources of financial aid lag behind nontuition revenues, rates will also have to go up. Increasingly, the published price of tuition may become meaningless.

The best example would be in the hospital setting. We read about the cost of $1,500 or $2,000 a day to spend time in an intensive care unit. Very few people actually pay that cost to the hospital. There is a variety of payers, Blue Cross/Blue Shield, the federal and state governments, who pay varying levels of that stated price. We suggest that the same phenomenon may begin to prevail in higher education.

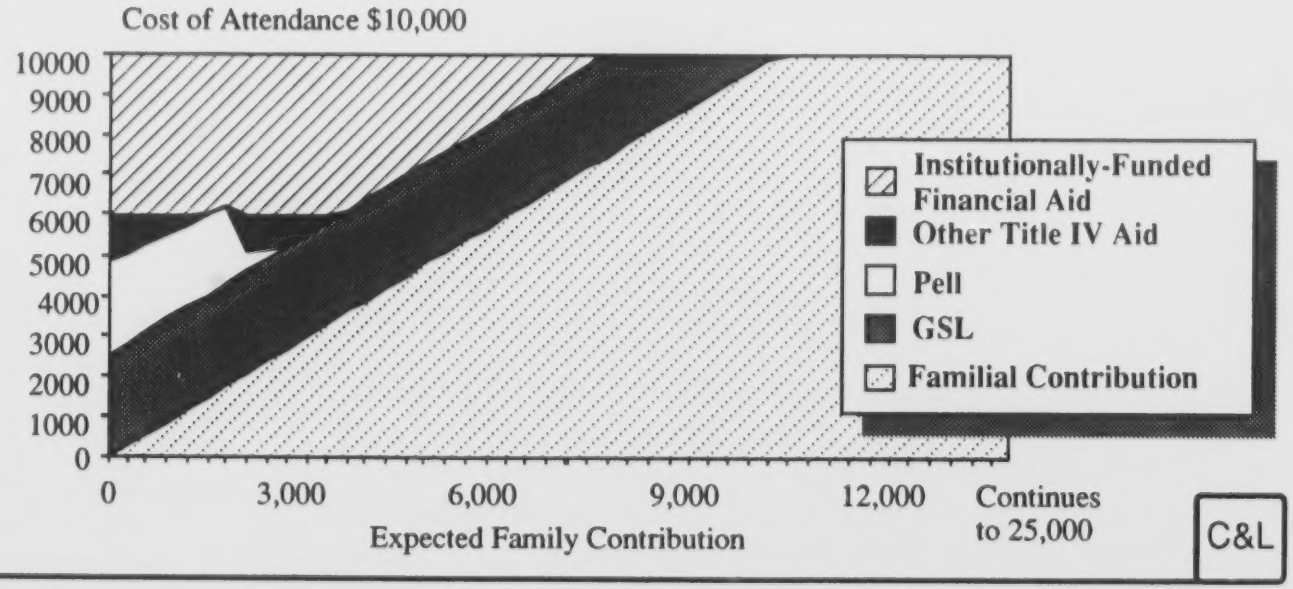
Tuition Discounting

Growth in Tuition Rates Compared with Family Resources, 1980–1985



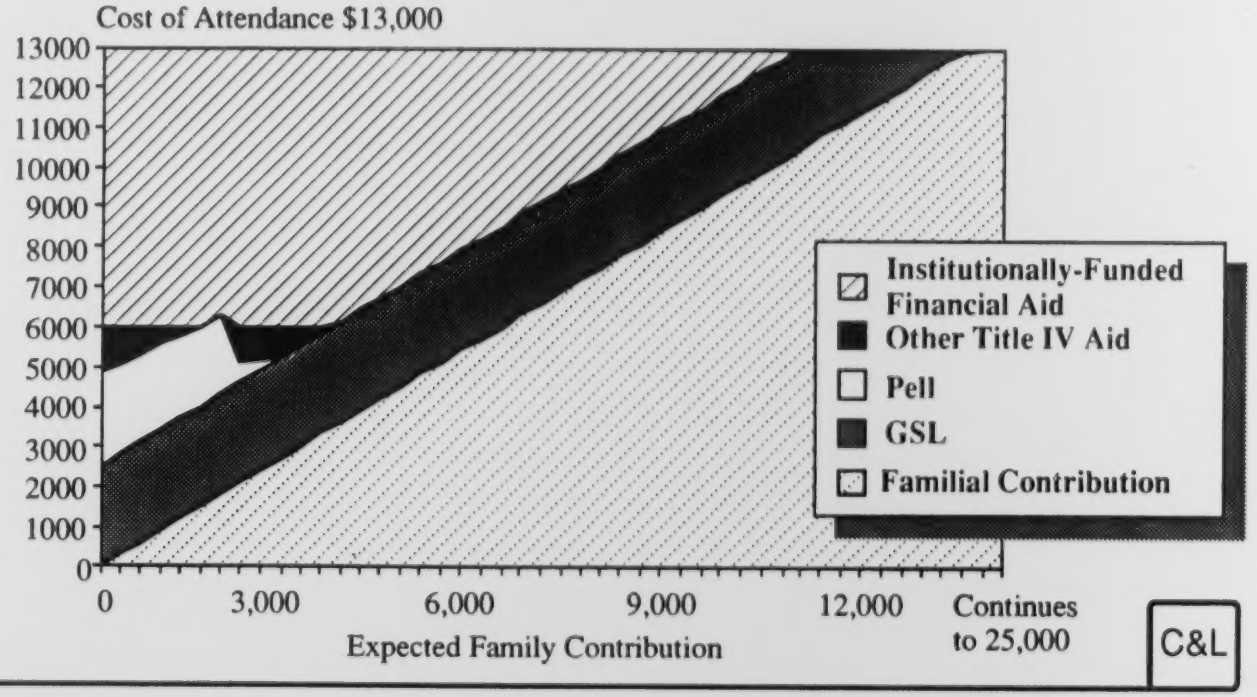
Tuition Discounting

Funding Sources for the Cost of Attendance by Family Resource Level



Tuition Discounting

Funding Sources for the Cost of Attendance by Family Resource Level



Questions and Answers

DR. ROGERS: That was a very stimulating sequence of discussions and I would like to offer a few minutes for questions from the audience. Are there people that have questions or issues that you would like to pursue with any one of our three speakers?

MARY JANE CALAIS: I am Mary Jane Calais from NACUBO. Sean, in your presentation of what happens as you increase discounting, doesn't that relate back to the two institutions that you gave as examples who were failing? How are institutions going to recognize a break-even point? Isn't there going to be a time when they can't continue to discount if their financial structure isn't sound? Isn't a warning light going to have to go off?

MR. RUSH: The critical issue will be the control of costs and the maximization of nontuition revenue sources. Those are two of the variables that affect that. But in terms of a warning light, it should have gone on for a number of institutions. Beyond that, the real issue comes down to controlling costs. A large driver in several of those examples and models was the cost behavior of the institution, as well as the growth in nontuition revenue sources.

JON C. STRAUSS: Jon Strauss, Worcester Polytechnic Institute.

Sean, you didn't mention the psychology of the parents that are paying this full price as the discrepancy between price and cost grows greater. Could you comment on that?

MR. RUSH: Help me understand your question a little bit better, Jon.

MR. STRAUSS: Well, you were assuming that the parents that are paying the full price would continue to do so as the discounting phenomena got greater and greater. Most of us think that is going to be more and more of a factor. You are assuming that it will continue to do that forever.

MR. RUSH: Well, at least those models do. I would suggest you are exactly right, that it would not go on forever. The models try to portray what could happen given a certain set of assumptions. The likelihood of that happening and the market being willing to pay and absorb that level of price is probably diminishing. It comes back to the issue of costs and cost control within the institution, because that certainly is a driver behind the stated tuition price.

I would guess, as one who has to pay that tuition bill in 10 or 15 years, I am going to be less likely to be responsive to that.

MR. STRAUSS: I submit it is not going to take 10 or 15 years.

MR. RUSH: I agree with you.

RICHARD E. ANDERSON: Dick Anderson from Washington University.

Sean, what do you see as the pressures on need-blind admission and the various subtle and sometimes not-so-subtle alternatives to the need-blind policies that many institutions are trying to maintain?

MR. RUSH: This is pure speculation on my part, but my guess is that it will eventually go away. I think many institutions will try valiantly to maintain need-blind admissions, but several have abandoned the notion of need-blind admissions. Some are going to a 90-percent-of-need approach; the pressures are going to be enormous in those institutions that try to maintain need-blind admissions.

The rate of tuition growth, as well as financial aid, is outpacing the ability of endowments, at least in the well-endowed institutions that have need-blind admissions. The increase in tuition price is outstripping the ability of the endowment and the charitable gift streams to support it.

There will be considerable pressure. As long as costs increase at historical rates, it may be very difficult to change it.

DR. ROGERS: Let me ask a question of Jeff.

If we accept the data that you and Rita put forth that people are getting, in some measure, quality for what they pay and institutions that raise tuition have been able to produce higher quality on average, what would be an appropriate federal response policy-wise in the sense of the objective of working at the federal level with tuition as an issue to constrain it or to suggest that it go up? What do you think would be an appropriate recommendation?

DR. GILMORE: I am not sure I want to touch that one, but I will.

Bill Bennett made this issue infamous and the data that I have show that he was in large measure wrong. Colleges are not, in general, gouging the consumer. As long as we have consumers out there who value a high-quality education, they are going to be willing to pay for it.

I guess on the federal level the question becomes how much of a quality education should be governmentally subsidized. In other words, should government pay for the very best education? How much access, how much choice, is it a federal responsibility to fund? If we can get good education at community colleges, at state universities, at some lower-priced private colleges, does the federal government have an obligation to provide the choice to students to go to any college at whatever price?

The issue is not that there are expensive colleges. The issue is how much the federal government is responsible for providing choice and access.

J. MICHAEL MULLEN: I am Mike Mullen with the Virginia State Council of Higher Education. Jeff, you focused in your report on private institutions. Have you looked at the data for public institutions?

Then a second question to Sean: In your work, do you see any patterns where state institutions are using their charges to nonresidents to provide a pool of funds for waivers?

DR. GILMORE: The quick answer is "no," I have not looked at public institutions, just private institutions. The reason is fairly clear. At private institutions, the pricing structure is fairly related to the actual cost of operations. In the public sector the price is so heavily subsidized, it becomes almost impossible to equate price with any particular quality indicator. I would have to look at that more in terms of the costs of providing education.

It is much more complicated to get into the public sector because of the way tuition is set. It is not always directly related to cost. Maybe that is another area to go into, but, no, I have not looked at public institutions.

MR. RUSH: We haven't looked at the use of out-of-state tuition dollars to provide financial aid to in-state students. It wouldn't surprise me if that were happening, but, again, we haven't analyzed it.

My guess is that increasingly, public institutions will become deeply involved in the discounting phenomenon. There is a lot of pressure on public institutions right now to increase tuition, given state economies and cutbacks in appropriations at many states.

As prices go up, the behavior you see, at least with the private institutions that we talked about in our examples, would begin to occur in the public sector as well, as discounting was required to provide access to students, which is part of the mission of many public institutions.

TIMOTHY WARNER: I am Tim Warner from Stanford. I don't want to talk about yachts,

I just want to ask a basic policy question.

This applies to all of the panelists. Particularly with private colleges, what is wrong from a public policy perspective with colleges going under consolidation? Why shouldn't that be allowed to happen? Why should the issue of continued discounting and public subsidies continue to come up in this discussion?

MR. RUSH: As a matter of public policy, it is happening in the health care sector, at least in my home state of Massachusetts and in other states that I have had a chance to look at. In Massachusetts, for 10 or 15, perhaps even 20, years, it was stated that the number of beds in Massachusetts was far in excess of what was required, probably by as much as 100 percent. Through various state policies enacted over the last 10 years or so, the ratchet has squeezed the reimbursement of many institutions and we are looking at any number of hospitals going out of business or in bankruptcy or near bankruptcy as a shakeout.

My guess is that a similarly Darwinian model will prevail in higher education. As the marginal institutions, both academically and economically, face hard times, they are going to either close or end up merging with another institution. My guess is that a Darwinian model will prevail and perhaps policy does not need to be set with regard to that.

DR. GILMORE: I would like to respond to that too.

In terms of straight financial concerns, some of the colleges probably should go out of business. They are not strong financially. They are not delivering a product that anybody would be proud of, especially in relation to other colleges.

From a public policy standpoint, it is a much more complicated, more difficult issue. First, colleges are very tenacious and they have strong constituencies, unlike hospitals. You never see an alumni organization of a hospital try to save a hospital, but you have that in colleges. You have alumni who are in influential state positions. And communities in college towns often revolve around a college.

So even a bad college has a constituency that is hard to eliminate. Also, in a public policy sense, there is the issue of diversity and of access. Some poorly funded colleges are historically black colleges and universities, for example, or religious institutions, or connected with religious institutions.

To the degree that we value diversity in higher education and we want a variety of institutional types, there is a public interest in assisting institutions in maintaining that diversity. If it is just a financial issue, they ought to go out of business, but it is more than a financial issue.

Current Research On Reducing Institutional Cost Structures

Reducing Institutional Costs

Michael L. Tierney
University of Pennsylvania

I am delighted to be here this morning. I am finding that I am among the few academics here and I am a little chagrined and a little nervous about talking to people who tend to be organized towards the financial side of the institution. If we would just get the academics to do it right, we would have no cost problems.

I would like to talk a little bit about how can we control instructional costs. I am reminded of the well-worn story about the man inside the bottle, which I am sure most of you have heard about; the issue is how does he get out. I am going to talk about issues of cost escalation in terms of structural budgets and what we have been doing as a mechanism for addressing that, but the obvious answer to how does he get out is how did he get in.

I would like to spend a little time talking about what I believe is the primary reason for how we got into this predicament that we find ourselves.

I want to be cautious when I lay out the reasons for how I think we got into this predicament because it will affect the range of options that you consider in trying to close the deficit or control your instructional costs. I am unhappy in many ways about the various things people have trotted out to explain why costs increased on the instructional side, because they leave us with relatively little to do. If you say the rates of growth in faculty salaries are contributing to cost escalation on the instructional side, then the implication is we should slow the rate of increase.

That may not be a particularly attractive thing to do in the long run when you are trying to attract and retain a faculty. There are other implications that we have always talked about, but they leave us without much in the way of options.

After I lay out the three reasons for why costs increase in the instructional side of the budget, I am going to suggest a way to get a handle on it that is going to be a bit different and maybe a bit controversial, but that was the intention of my remarks today. Finally, I am going to close with some implications for the type of research that needs to be done on instructional cost functions.

I am going to make a disclaimer. I am speaking here this morning as an academician. I am not representing the policies or practices of the University of Pennsylvania, but you will see this does have something to do with the policies and practices of Penn's Graduate School of Education.

Before I address the three major forces, I have two preliminary considerations I would like you to think about. The first assumption is that the basic unit of analysis is the academic department. We have, over the course of time, had all sorts of thoughts about how to analyze instructional costs. If you are not at the departmental level, you

aren't where the action is, because the primary decision-making unit responsible for activities that affect the costs of the instructional program and services is at the department level.

This has the implication that the institution may be treated as little more than a collection of departments. We have already had one Hutchins reference this morning. I am going to give you another one. There is the Hutchins quote from 1936 in which he says, "A university is a series of disparate schools and departments, united only by the fact that they share a common president and board of trustees." I want to emphasize this notion of a series of disparate departments.

The basic outputs, if you are looking at departments of an instructional program, are courses. We have spent an enormous amount of time talking about the various outputs of higher education. We can talk about student credit hours. We can talk about degrees awarded and value added in some sense or other. But in point of fact what departments produce are courses.

Now, I am sure that you are going to make an objection that this is wrong because departments do other things, like produce research. There is a problem of joint production of research and teaching that has been discussed but never really adequately addressed; it is my contention that, at least on the undergraduate level, the notion of research and teaching in academic departments is one of substitution. People "buy out" their time from doing undergraduate instruction; for the most part the courses that they teach at the undergraduate level are little affected by the research and scholarship that they might do. At the graduate level, this gets to be more complicated because there is every likelihood that at the graduate level the joint production phenomena does, in fact, work, but not entirely.

With these two assumptions aside, I would like to talk about the investment decision on the part of departments in courses. I am going to argue this morning that there are three factors that determine the departmental investment decision and its scope, scale, and structure. This is language that is becoming somewhat more familiar in a variety of contexts. I want to define each one issue and suggest the driving mechanism underneath that issue.

The issue of scope is the breadth of courses that a department feels it must teach and what subject matter it must cover. This is the culmination and the fruits of the academic revolution in higher education. We have produced a series of people with Ph.D.s who go into departments and are socialized in their graduate experience as to what their discipline covers, how the frontiers of knowledge are to be advanced, and how it is to be taught.

If the major research universities, which produce most of the faculty who occupy most institutions in the country, substantially changed the scope of the curriculum that they socialize their students in at the graduate level, it would have a powerful impact on what other places think they must teach. But this is a faculty prerogative and it is an unconscious assumption on the part of the faculty that what they should teach is what they were taught in graduate school.

The second issue is scale. How many courses are necessary to gain proficiency in the subject areas you have decided to teach? The driving mechanisms on the issues of scale are faculty specialization and the growth of dollars. Faculty, as they get more and more interested in their particular areas, develop more and more specialized courses; this adds to the curriculum. They do not substitute new courses for older courses. They add them to the curriculum. So a faculty member, who may have started by teaching two or three undergraduate courses, picks up a research program and is teaching now two or three graduate courses. They don't do that by reducing the two or three undergraduate courses they originally taught. That becomes somebody else's responsibility.

The third issue, and perhaps my favorite, is curricular structure. What are the relationships among courses, in terms of pre- or co-requisites? This has been documented in some ways by Bob Zemsky. Particularly in the humanities and social sciences, the degree of structure in the curriculum has eroded. Why has that curriculum structure eroded?

The answer is another quote from Jenks and Reesma's book, which says "Faculty are neither a tolerant nor easy-going species." In order to hold and have some interdepartmental peace, you let everybody do what they want to do as long as they don't infringe upon what you want to do. So, in order to maintain peace within a department, everybody's own interests are pursued without limit or constraint.

So, there are that three issues that drive the scope. The breadth, of course, is the subject matter that has to be offered within a department. The scale is driven by the number of courses you have to deliver to produce an adequately trained person. A third consideration is the relationships among departments among these courses.

If those are the three primary determinants of what is driving departmental curricula, what do you do to change them? How do you put constraints on the set of courses that departments are offering?

The first thing is, as dean or provost or whatever, you limit the number of courses that can be taught in a department. This is a very blunt instrument but it works. You say to the department that the total number of courses that your department can teach next year is a product of the teaching mode times the number of current standing faculty. It is a very simple rule. This is something they all understand. In every case, it would require some enormous reduction in the number of courses taught.

To give you an example, I will show you what we have done and are still working on in my school. When I first became associate dean, we were teaching 234 courses. I became associate dean in January. The curriculum for the following year was already in place and couldn't be affected, but starting with the next year, we have been working steadily on reducing the number of courses taught, to a point where we are now negotiating with the chairs to reduce by yet another 15 to 20 percent the number of courses taught. By fiscal 1993, we will have reduced the number of courses taught by half.

We do this for several reasons. When we first came in, we found that fewer than 50 percent of our student credit hours were being taught by members of the tenure-track faculty. There were nonstanding faculty that were teaching courses; we said that was incorrect.

Purely on academic grounds, we said that the tenure-track faculty, what we call standing faculty at our school, had to get behind the curriculum. That has obvious quality implications for the nature of what we are offering our students.

As it turns out—and I am sure all of us have this problem—the people who are not in the tenure-track faculty, who may be there year after year never go through any sort of academic review, ever. Because they are not in the tenure track, they are not subject to the normal stricture of the tenure track review. Because they are not part of the normal salary increment policy, they are not reviewed in terms of their teaching proficiency. It is not just part-timers out there. They are part time and outside the normal academic quality control mechanisms almost entirely.

To accomplish this level of reduction in courses, it has to be a drastic cut. It must force the faculty to reexamine those issues involving scope, scale, and structure. If you tell them they can't teach all those courses, they have to do something about the scope, the range of subject matter they are going to entertain. If you tell them you can't have all these levels of specialization in courses, then they have to rethink the curriculum. You can't just whittle off the edges. You cannot start your instructional cost control by cutting part-time faculty, because when times get good, the curriculum will bloom back very quickly. The only way to make a fundamental change is to force a rearticulation of the curriculum so that it doesn't expand back again when good times return.

There is a corollary to limiting the number of courses taught. You have to create norms for class size distribution. Without question, if you reduce the number of courses, the average class size is going to go up. But if you let yourself be trapped into that issue, it is a serious mistake.

The issue is not average class size. The issue is class size distribution. You can have any average class size through various combinations of class size distributions and get the same average class size through a variety of mechanisms. Forty percent of our current courses have one to five students in them.

We are pushing very hard on reexamining the curriculum. As the faculty come to grips with this issue, they have to look at class size distribution in two dimensions. The first dimension is the curriculum as experienced by students. You have to provide students with enough small courses so that all students have an opportunity to experience one. If you only have a few small courses, they are so small that very few students have an opportunity to get a hold of one of them. You have to have a sufficient number of small classes, but you also have to have larger classes to offset it.

The other dimension is you have to look at the teaching responsibilities of faculty. This is, again, an issue of creating norms. Some faculty can teach one or two very large classes in order to teach one little class. Some places talk about this in terms of

grandfather courses versus other types of courses. Not all faculty should be teaching big classes, nor should all faculty be allowed to teach only little classes. You have to work on that specifically.

The third dimension is to shift incentives to departments. In the University of Pennsylvania we are a very decentralized budgeting system, but even within our school we have decentralized even further and pushed the decisions down.

I am going to go back to the Hutchins' quote because there is a very telling point. When Clark Kerr came up with the idea of updating Hutchins' original quote, which was, "A university is a series of disparate departments . . ." he didn't say a university is a series of disparate departments. What Clark Kerr said—and it is a very interesting modification—let me get you the exact quote.

He said, "I think of the university as a series of individual faculty entrepreneurs, who are combined by a common complaint over parking." The shift from department to individual faculty has occurred. It is a disastrous consequence, because the faculty now are individual entrepreneurs. You have to reassess and empower departmental chairs in ways that you haven't done.

This leads me to some final conclusions. What type of research is required to do an analysis of instructional cost? It has to be at the departmental level. It should treat courses as a measure of output, holding constant whatever research activities go on at that level. You have to figure out what resources, direct and indirect, are consumed by those courses, not a trivial matter. And you have to figure the appropriate time frame. In my sense, the "short run" is probably somewhere in the two- to four-year range.

Only Bill Massy and Bob Zemsky are doing this type of research, looking at cost functions at the departmental level and with the course as a focus. I refer you to some of the Pew *Policy Perspectives* research reports on academic departmental cost structures.

The other major issue that I want to close with is that there needs to be greater articulation as to how departments interrelate. That ultimately is a strategic planning decision. You have to have a raison d'etre for each of your departments and how they link to each other, so that the university is more than a series of departments housed within the building.

Thank you.

Activity-Based Costing

Frederick J. Turk
KPMG Peat Marwick

I would like follow up on Mike's conversation and talk more about something else that relates to analysis of the costs in higher education. I want to talk about another sort of approach to costing that I have come across.

What we heard yesterday from Mike Walsh and earlier today was some discussion about what has been happening at Stanford University. I would like to point to that as being a very important point at which we all began to think more about the cost behavior of institutions of higher education. There is the whole issue of repositioning at Stanford, the press it has gotten, the kind of experience that I have had, at least, in meeting with institutions around the country at board levels, at the management level, the point that has been made to all of us in terms of taking a look at our cost structure.

The other thing that is interesting is the work that Zemsky and Massy have done, which Mike just referred to; they are beginning to point to some particular issues that we need to focus on.

Finally, there is an increasing dialogue about the term "quality management," "strategic quality management," "total quality management," whatever you like. We have a number of institutions around the country that, indeed, are beginning to apply the concept of taking a look at themselves, taking a look at individual entities within the enterprise, to determine whether or not there is a better way of providing service in a more high-quality fashion.

What we lack are tools that help us get our arms around the subject. That is why the work of Zemsky and Massy is interesting. What Mike has been reporting is also interesting. I would like to talk about a new costing approach.

There are three key factors that we all are going to have to hit on in order to make some impact in cost behavior or cost containment. What Mike Walsh talked about yesterday, which drives the whole process, is that we need to have a sense of urgency. Otherwise, why should we do anything? That sense of urgency might be the budget or it might be something else that occurs within or outside an institution that gives people pause, gives people concern for a situation that may be beginning to occur in the institution.

I attribute much more power to a board than perhaps Mike does, at least in the number of institutions that I have worked with, and the opportunity for influence and focus may be there at this present time.

We need more information about cost. Mike talked about that yesterday. In order to really make some change, we have to have resolve, up and down the line, to do

something substantive to begin to deal with the issues at hand, on the academic side as well as in the administrative and support side.

One of the problems that we all have is we don't know our costs very well. Across higher education, that isn't a universally acceptable statement, but it is pretty accurate in a lot of ways. We are caught in a cost information trap. We are a captive of our accounting system. Our accounting system captures cost in a standard organizational way that links directly to the way the budget is prepared; that is very effective for cost control on a line item basis. But we need something else. We don't have a costing system in institutions of higher education. It is amazing to me how much activity we had many years ago on the whole subject of costing. It was something that we were all doing and that disappeared. It disappeared, I suspect, with the good times. Now that we are beginning to be more concerned about the way we are using resources, maybe we have to go back and rethink the whole issue of cost and get to a point at which we begin to understand cost behavior better.

The culture of this system as we know it is to accept the base cost that we have throughout the institution and merely increment it. That is the way in which we tend to operate. Increment it and decrement it. Good times, we increment it; bad times, we decrement by 5 percent, 6 percent, 20 percent. All of that is interesting but not very useful if we are trying to put our nickels on the things that are going to be the most productive for the institution in the long run in terms of its mission, picking up a point again that Mike hit on yesterday.

What does a traditional costing system look like? We are all familiar with that. We have a whole series of overhead cost pools that we might call stage-one cost pools or interim cost centers. Those are things like plant O&M (operation and maintenance) and finance admissions. We apply a series of allocation factors so that we can get our costs down to schools, departments, disciplines, whatever the ultimate cost objective is that we have in mind. On top of that, we obviously have certain direct costs, such as salaries and wages, that are at the school or departmental level. That is the traditional way that we have applied costs in the institution.

What are the cost allocation factors? We are all familiar with those. Salaries and wages, student credit hours produced, square feet of assignable space. They are volume related in terms of the products that are coming out of the schools, departments, disciplines. They are linked to those particular benefiting entities that we are trying to get cost to. That has been the fundamental basis upon which costs have been allocated.

What is wrong with the traditional costing model? It assumes that the departments, the disciplines, or the schools—I use those three terms as being synonymous—are organizationally different, but that is where the costs will occur; therefore, we allocate accordingly. I don't think it really relates to the cost behavior. We are merely allocating the cost. We don't focus on where the cost came from and what happened, what was behind that cost. That is one of our shortcomings.

Activity-based costing comes out of some work that was done and has been done by Robin Cooper and Robert Kaplan at Harvard. I ran into this concept in working

with some of my colleagues at Peat Marwick, who were working with Cooper and Kaplan in introducing this concept in a manufacturing environment, where manufacturing has been moving to a fixed-cost base because of the introduction of technology and the like. Perhaps this "ABC approach" offers us a different tool, a different way in which we can begin to accumulate and analyze cost. I would like to touch on a couple of the concepts.

In a traditional costing model, we typically assume that the individual products themselves cause a cost to occur. We use variable volume-related allocation bases to drive costs or trace costs to the product. In an ABC model, we trace the cost based on the demand for activities. I am going to explain what that means in a minute. First of all we look at the activities that are going on. Then we trace the costs from that point to the products and to the commercial environment.

The key principle that we are focusing on is where the cost came from, the activities that are going on in various segments of the institution. Activities relate to or focus on the kinds of transactions that are happening within an entity, the kinds of actual activities or transactions that are caused within a particular organizational unit. We might have three, four, five, six, seven different activities.

I will give you an example in a minute. We want to identify the forces behind the cost, which is a term called cost drivers. I think, Mike, you used the term "cost drivers" or "drivers of cost" a moment ago. That is what we are trying to get at here.

The ABC cost system says we take the costs that we accumulate. Perhaps we even have two stages of drivers as an example to make it a little more complicated. We accumulate cost by activities and we have some aggregate common kinds of activities that we want to bring costs together on and then through that basis, attribute those costs to schools and departments.

Let me give you a real example. Let's take an admissions department. Typically, when we might allocate admissions to a final cost objective, we probably would use the number of students that are in those particular departments, head count or maybe FTEs, whatever you like. We would allocate that.

The ABC methodology would say wait a minute. First of all, we need to understand the transactions actually occurring in the admissions department. For example, there are four kinds: recruiting and inquiry response, application processing, acceptance and follow-up, and communications.

At that first level of activity, those are the kinds of transactions that are occurring. We want to try to identify what costs pertain to those. At the next level, we might conclude that there are two major transactions that are really occurring in that enterprise. One is to market the student and the other is to get the student to come to the institution and be a payer. In so doing, we are creating the customer and completing the sale.

We might find that certain costs relate to one of these actions and certain costs relate to the other. We might apply costs differently for each of these accumulations to the particular school or department that ultimately is receiving a customer. We would

have to come up with a way of doing that.

Our challenges are threefold. One, we need to understand costs. What drives cost? The first stage is a cost-driver analysis. How do we get the main kinds of costs we have to these particular activities so we can understand what it costs us to do each of these things and begin to come to a conclusion about how the resources that we are applying here are being used. And can we change that because we want to do something different in this department?

This is one of the more interesting aspects. This kind of concept also can be applied in an academic department, in terms of the variety of instruction, research, counseling, on and on. Although this wasn't conceived for application in an academic department, because that is the ultimate recipient of overhead cost, this was conceived for analysis of overhead departments.

The second challenge is identifying the opportunities for change. How can we contain the costs once we understand them? There are a whole variety of things that we have identified in this ABC concept. We can change the flow. We can change the schedule with which activities are performed. We can provide more training to make people more efficient. We can simplify the process, eliminate the redundant and unnecessary.

Doesn't this sound familiar with regard to what Mike was talking about yesterday? Aren't these some of the drivers of the cost? However, now we are talking about the specific departmental level.

Our third challenge is to make the tough decisions. This is done once you understand the cost, once you figure out how to make the change. We get back to Mike's point yesterday about making tough decisions. We may have to make cuts. We may have to change people's responsibility. We have to throw out the old Haye points, as he mentioned yesterday, and think about a new way in which to look at the enterprise.

Thank you.

Cost Reduction Trends and Student Employment

Roger D. Lowe
Wichita State University

Earlier this year, the Department of Education funded two research studies with the National Association of College and University Business Officers on cost reduction in higher education. The first study examined student employment in higher education over a 15-year period. This research looks at how students have been utilized in employment opportunities on campus and how and why the trends have changed. Case studies have been done that illustrate the changing role of the student and how the student and the institution can both win.

The second research study is called "Signs of Our Times: Cost Reduction in 1990." The research in this area examines how institutions have reduced cost over a period of 15 years. Case studies of the five most innovative approaches for 1990 have been conducted and financial implications analyzed.

NACUBO used as a database entries over the past 15 years in the NACUBO/USX Cost Reduction Incentive Awards Program, which is designed to make institutions think about cost reduction and to share information regarding the same to other institutions.

NACUBO and the USX Foundation, formerly known as U.S. Steel Foundation, have been partners for 16 years in this very important movement relating to cost reductions in higher education, which reflects NACUBO's ongoing concern over the past 15 years with the cost of education.

NACUBO has received 274 applications for the 16th-year judging that will be done in April. The program is sponsored by USX and implemented by NACUBO. The NACUBO/USX Cost Reduction Incentives Award Committee is charged to promote the aims and goals of the competition, fostering a sense of shared information in cost reduction techniques throughout the higher education community; and to judge the merits of each proposal according to specific criteria.

Each year, NACUBO sends applications to its member institutions and encourages their participation in sharing their new cost-saving ideas with other institutions of higher education. The committee meets annually in April to review the applications with four criteria in mind: first, the program idea must be capable of adaptation to other campuses. Second, the originality and the uniqueness of the idea. Third, the amount of cost reduction without loss of program effectiveness. And, fourth, the amount of involvement of faculty, staff, and students.

Portability at other institutions is very important in the judging process. The amount of cost reduction is also important as a measure of a percentage of the

institution's budget. This permits recognition of cost saving ideas at small colleges and community colleges, as well as the larger and more prestigious institutions.

During the 15 years of this program, the committee has received 2,588 applications; 750 of these ideas received either a cash award or honorable mention. These 750 ideas represented cost savings totaling more than $301 million as reported by the institutions that conceived them.

The multiplier effect of the implementation of these ideas on other campuses is significant. As the program has become more successful and as funds for operation of our universities have become more scarce, the program has gained in popularity. Last year, for example, the program went beyond the United States boundaries with Canadian proposals and booklets requested worldwide.

The work of the committee is serious and the review of each application is not a cursory one. If an idea has been judged in the past, the committee does not consider its merit in that recognition has already been given and information disseminated to universities throughout the country.

After the judging is completed, a booklet of ideas is prepared and sent to all NACUBO members with the objective that each will adapt ideas for their own campus. The winners are recognized at the NACUBO annual meeting. NACUBO's information exchange program also disseminates specific proposal information to institutions seeking ideas in particular areas.

The monetary awards range from $10,000 to $100, with only one monetary award to an individual institution in any given year. Honorable mention awards are given for recognized ideas beyond the first for any given institution. Ideas that have been received and recognized run the gamut in higher education; facilities and energy conservation have been very popular ones in the past. Others include efficiencies in auxiliary operations, finance, insurance, management, computing, personnel, purchasing, telecommunications, transportation, student records management, and hazardous waste.

Within each of these broad categories are a number of individual ideas of cost savings. This program has generated much media attention that takes the ideas far beyond NACUBO. The research done to date demonstrates that the applications received reflect the real world we live in. As the world changes, institutions' applications respond accordingly.

For example, when the energy crisis hit in the mid-1970s, the increase in energy-related applications rose significantly and stayed up for a period of time. Similar trends have been found relating to asbestos removal, hazardous waste disposal, and escalation in health insurance rates; with more females joining the work force and the average age of our students increasing, we are receiving more applications relating to child care.

There are two significant areas where applications have remained high over the past 15 years. One relates to computer technology and the rapid change that prompts ideas and new applications. Four of the five top winners in the 1990 judging involved

computer technology.

The second relates to facilities and facilities maintenance. We are all aware of the decaying campuses and the band-aid approach applied at a number of institutions to assist in the problem of the continuing mounting of deferred maintenance. Many of the applications received reflect the ingenuity of the plant maintenance personnel in applying a band-aid approach to resolve a problem temporarily. NACUBO will not recognize these ideas because of their short-term solution.

We are not exempt from this deferred maintenance problem in the state of Kansas. Three years ago, the Kansas Board of Regents went on record with the legislature that a major portion of the funds that had heretofore been used for building construction be redirected for rehabilitation and major repairs of existing facilities. This plan is working and we are now making real inroads into the major deficiencies that have existed for a number of years.

The public universities in the state of Kansas have 600 buildings with 22.5 million square feet of space and a replacement cost of $2.4 billion. These buildings have 19 acres of roofs, 31 million square feet of streets, and 155 miles of steam, water, and sewer mains to keep operational. Prior to the redirection of this funding, there was $175 million worth of deferred maintenance on the lists.

The trends reveal that institutions continually build on ideas and technology. For example, the five most innovative approaches to cost savings in 1990 were awarded as follows: the top award was given to a small liberal arts college for a computerized student records and advisement system. The system matches each student with an academic check list that shows requirements based on the student's major field of study and tracks the student's progress from enrollment to graduation.

The second award went to a large private institution for development of a laser optic system. The system is an electronic document and retrieval system developed to eliminate an eight-week backlog of paperwork and invoicing in the accounts payable department.

The third award went to a community college for its installation of a student information monitor system. The system provides students with computerized access to information through a vehicle similar to a bank automatic teller machine in an effort to provide more student information without increasing administrative staffing.

The fourth award went to a large public university for its installation of a software management program in a network computer laboratory. This application related to the installation of software to make its PC labs safe from software theft, licensing agreement violations, and viruses.

The fifth award went to a large public university for the installation of a new exit sign light bulb replacement. The system is too complicated to explain, but it has assisted this institution extremely well in eliminating labor costs and constantly monitoring the exit lights for burned out bulbs.

Follow-up case studies examining these five projects demonstrate that in one year

significant changes were made to the original concepts. For example, in the case of the top award winner, the concept of using a computerized student records and advisement system, in only one year the following changes were made. The campus map directory facility has expanded to include a look-up capability. The degree audit system has been expanded to include a "what if" module. This module allows the student to perform a degree audit based on his or her current curriculum and can show the impact of a curriculum change in the resulting degree requirements. The system matches courses taken to those required. Additional enhancements will include adding videographics, the course catalog, and a vehicle for interest surveys from students.

Research shows good ideas in cost-saving innovations and provides a solid foundation for years of cost-savings efforts to come. If each institution in the country solves only one problem and applies what its sister institutions have learned in effective cost-cutting approaches, the cost of education can be significantly reduced.

The research on student employment demonstrates the trends in this area have changed from more manual tasks to more sophisticated types of employment activities. In the late 1970s, it was commonplace to use students for mowing lawns, painting buildings, servicing food in the cafeteria, and related manual tasks. The trends have changed; currently students are used in skilled labor and technical positions.

Instead of merely being in the workforce, in many respects students have become partners in various projects such as energy conservation, hazardous waste, and architectural design of small projects. In 1989, the top cost-reduction award went to an institution that developed a professional student-assisted program in which students were recruited and placed into paraprofessional and entry level professional positions as an opportunity to contribute to the professional and educational development of the student.

The average student today is older. The world students live in is much more technically oriented and the necessity of practical experience, along with the formal education in today's job market, contribute to the changing times.

On behalf of the NACUBO/USX Cost Reduction Incentive Awards Committee, I applaud the Department of Education for providing the funding for research, which enables us to begin to examine the trends of cost reduction. We at NACUBO will continue to foster a sense of shared information in cost reduction techniques throughout higher education.

Questions and Answers

T. EDWARD HOLLANDER: Ted Hollander, Rutgers. This is directed at Mike.

You talked about the importance of dealing with the academic unit and you left us hanging on the question of how you provide incentives at the departmental level to cause behavior changes. Could you elaborate? Could you finish your presentation in that area?

DR. TIERNEY: One incentive is just a flat out constraint. We tell them . . .

DR. HOLLANDER: That is not an incentive.

DR. TIERNEY: That is right. There is no incentive in that. But it is not an incentive issue. We say exactly how many courses a department can teach. Over the first couple of years, this was subject to some negotiation and we got maybe 80 percent of our target. Now we are on a roll.

In the 1992-93 academic year, we did have a little incentive, which was a reduction in the teaching load by one course. At the same time we were doing this, we set up a series of incentives on the department level. For instance, we allocated a share of the indirect cost recoveries to the department chair to exercise at his or her discretion. We allocated salary savings to the principal investigator. We also allocated part of the salary savings, when people would buy out during the academic year, back to the department chair to staff the course the person bought out of or to use in any other way. We treated it as unrestricted income.

We changed our tuition distribution rule so that we gave more emphasis to recruiting students. If you distribute tuition based on where a student enrolls, in which courses he or she enrolls, you have provided a strong incentive to be retentive on the part of departments; we wanted to break that down.

KATHERINE HANSON: Katharine Hanson from the Consortium on Financing Higher Education.

A further question on incentives and getting faculty to do or not do certain things. When you have faculty who buy out time, particularly at the undergraduate level, how does that solve your problem with respect to quality control?

One of the issues that occurs at a number of large universities is the notion that faculty, particularly entrepreneurial faculty, are very capable and happy to buy out their time. That leaves "n" dollars to the department. Even if you give it back, they say, ah ha, we will save dollars here by having an itinerant faculty person teach the

course and you end up with a large number of undergraduates being taught by people who are not affiliated with the institution or something else. How do you deal with that?

DR. TIERNEY: Let's say we allocate the salary savings back to the department and the department says, I want to hire one part-time academic to do this. The dean says, if you put in a few thousand dollars more, I will match the total contribution, so you can hire a full-time person for the year; or provide some other incentive to try to move away from employing part-time faculty. The goal is to bring in somebody full time over a long period of time. As soon as you get a full-time person, he or she moves right into our normal academic review processes. He or she has to go through faculty personnel committees and the standard thing.

The dean has to sit down and provide an incentive to the department. Instead of putting it into a course-by-course part-time replacement, the dean must encourage the department to go for a full-time person. We are in the midst of doing that for next year. If a department has five courses that it has to cover by virtue of buy outs, we say we will pay half the cost of a full-time person to teach if you will pay the other half. That is our mechanism for dealing with that.

EDWARD DEL BIAGGIO: I am Ed Del Biaggio, vice president for administrative affairs at Humboldt State University.

A question for Fred. I would like you to explain more in terms of the ABC approach to higher education. You indicated that you determined the activity and then looked at the admissions records in each department. How would you implement a cost-reduction program if some of the departments wanted the activity performed and some of them didn't? You have recruitment. Everybody is involved in recruitment.

MR. TURK: Yes, but there are different ways in which you can recruit students. You can decide to travel broadly or you can decide to narrow your focus. You can identify specific states where you want to recruit students. There are certain ways in which you can decide to follow up or not follow up with students. Not being an admissions expert, I don't know what all the variables are, but my sense is, from people who I talk to, is that there are a whole variety of different things you can do in terms of reaching out and attracting students.

MR. DEL BIAGGIO: Let me see if I can focus more. The issue on the campus is cost reduction or cost elimination and you provide various activities on the campus. If you are attempting to reduce costs in your department and you provide services to various units in the institution, how do you address the issue of some people saying they will do without the service? Another department will say it won't be able to do

without a service.

MR. TURK: I see what you are getting at. Again, that goes back to something that Mike said yesterday. One of the things that I see as very valuable in analyzing any institution or organization is to identify or understand not only the costs but the revenues of particular schools and departments. In doing so, we have tended to merely allocate these costs to schools or departments. Naturally, people are unhappy with full cost allocations because they can't get their arms around them. They don't know what they mean, and deans and department chairs say, wait a minute. Why don't you look at those folks before you charge me with all that overhead? I want to make sure that what you are charging me is done appropriately and correctly.

This concept gets us back to the source of overhead charges. If you have the information available that tells you the cost of particular activities in admissions or any other function, then you also have an idea of the quality of that work. You begin to get some sense of what work is being accomplished and whether or not it is productive. Management, with information that it has now at hand, has to enter into the equation, as Mike was suggesting yesterday. Management has to begin to make judgments about whether or not it wants to do things in a different way, whether or not certain things actually have to be done just because a service is required, whether or not there are some functions that shouldn't be done any longer or should be done on a contract basis externally because the cost/benefit equation suggests that that is an appropriate move in that direction.

It is a judgment based on information that is objective and some subjective judgment about the scope of a particular entity's responsibility in terms of serving the enterprise.

Massy and Zemsky also suggest that when you step back and look at the enterprise in a different fashion, you can begin to think about ways in which you can combine like or complementary activities. That suggests a whole other way in which services might be provided, perhaps at less cost because there is less oversight required of independent entities. In essence you have one manager responsible for a variety of activities that were done in separate entities before.

DAVID A. LIEBERMAN: Dave Lieberman from the University of Miami.

This is for Fred. Some of your material is reminiscent of stuff that was used in the 1960s in cost-reduction programs. It is very fine, very fundamental and I don't know any other ways that you reduce cost, other than by the items that are in the circle.

When you put that together with activity-based costing, I have a concern as to the magnitude of the effort needed in a research university to achieve results. My best guess is that the front-end investment might exceed the net worth of many institutions or the consulting fees might exceed net worth. I also wonder if there is any opportunity to learn from each other, and if in your experience any institutions

have gotten together and compared activities and cost-reduction ideas so as to find a way to short-circuit the front-end investment.

I would like you to express yourself on the economics of the investment in cost reduction in terms of the time table and the resource requirements for implementing a program like this in a research university.

MR. TURK: That is an excellent question, Dave.

It is very important for institutions to understand the cost and revenues of schools. In so doing, you begin to raise a series of questions about what those costs are. When you bring together the cost of those schools and divisions and the revenues, people begin to question them.

You can't deal with it all economically, nor would I suggest that that be the case. What I would suggest is that you need a cost system that tries to arrive at that point at which you have cost and revenue by schools. Then I would begin to focus on selected overhead cost pools, begin to think about doing this analysis on a series of pilot projects that can be digested, that can be looked at, maybe that involve a combination of people in some sort of a task force environment.

I am offering an idea. I don't have any case studies in higher ed. There are a few case studies in the manufacturing environment at the current point. If one were to pick half-a-dozen cost centers or three cost centers as part of the allocation of costs, go back to those overhead pools, look at them with this concept in mind, and then change the way in which cost is attributed to those final cost objectives over a period of time, we will have better information with regard to what it really costs and we will begin to get at the internal drivers of cost in those particular entities that we have selected.

We have all tried to do some of that. We have never done it within a context of a cost system. We have individually looked at different departments or overhead cost centers, like plant O&M (operations and maintenance) and admissions. We have had a visiting team or an internal team to take a look at those operations to come up with suggestions for change. But there has never been a context in which to do that.

I saw this as the beginning of the creation of a cost system that is separate and apart from the traditional accounting system.

DENNIS P. JONES: Dennis Jones from NCHEMS (National Center for Higher Education Management Systems). My question is directed at Mike.

I would note two or three things, and I want to see what you found. Much of the conversation we have had and the topics you have addressed refer to the graduate level in a major research university. So you can use the course as a unit of analysis, limit courses, et cetera. That is point one.

Point two, when I go to smaller institutions and they talk about being strapped, the single most flexible resource they have is the time and attention of the faculty. If they really want to make a change within the institution, it has to happen because they do academic things differently.

Three, if you link that to the whole notion of improved undergraduate education, it comes down to not just changing the number of courses taught, but the content of those courses themselves. Particularly at the first two years in the undergraduate core, you talk about getting savings and improving education through change in the curriculum, not the number of courses.

When you limit the number of courses your faculty can offer, do you change the content of courses or are you paring specific courses and not doing a lot of curricular reform?

DR. TIERNEY: Well, there are at least two different questions asked.

First, we have gone through a moderately successful strategic planning exercise that had a committee composed almost entirely of faculty within our school. The first thing that faculty are wont to do is to talk about the curriculum. What we are imposing in terms of reductions in the number of courses is so fundamental, it forces them to talk about restructuring the curriculum. Reductions can no longer be within a single department because departments cannot, with their own resources, deliver what they would like to. They now have to talk to other departments and ask how they are going to do this together. Discussion has been given as a charge to the Committee on Degrees for our school. Has it happened yet? No, but I am hopeful that it will happen.

With respect to smaller institutions . . . I am fortunate. We don't have any undergraduates in our school, so I don't have to worry about that problem. Let's look at a small college with the exact same dynamics that I talked about that drove the structuring of the curriculum. The faculty argue that they want a teaching load that is three or four courses, even though it is not a research institution. Curriculum is set up so faculty can teach at night or in the summers to provide themselves with extra compensation to offset their salary. You have to get control over that.

One of the things we proposed was precisely along this line. I was talking to a school where the total size of the faculty was 75 and it was like I was talking to my own graduate faculty. They say, we teach, we do our graduate work, our preparation for graduate school. We have very small advanced upper division courses and a few humongous lower division courses. They weren't interested in teaching the lower division or structuring an experience for undergraduates that was very positive. They wanted to get into their labs and then take off.

They also, by the way, wanted to make sure that some required courses could only be taken during the summer or in the evening, so they received extra compensation. You have to have a certain degree of fortitude to stop that.

MR. HARRIS: Thank you all very much. Let's thank the panel. I am sorry we have to cut it off.

Financial Implications Of Demographic Trends

Introduction

Janet S. Hansen
The College Board

This is the workshop on financial implications of demographic trends. I'm Janet Hansen from The College Board, and I have the pleasure of introducing our discussants this morning.

Our speakers this morning are Carol Frances and Scott Hughes, who are working together on two monographs for NACUBO on the impact of demographic trends on higher education in the 1990s and the impact of workforce trends on higher education in the 1990s.

Carol is the president of Carol Frances + Associates and is a specialist in the economics and finance of higher education. Scott is a principal in the San Francisco Office of KPMG Peat Marwick and is a policy analyst and advisor on strategic services to postsecondary education clients.

Both Carol and Scott have extensive experience in advising associations and institutions in their areas of expertise and have written extensively. Carol's most recent report is *What Factors Affect College Tuition: A Guide to the Facts and Issues.* Scott's most recent publication is *Managing Change in Higher Education: Preparing for the 21st Century.*

Carol will lead off, then Scott will make his presentation, and then we'll have questions.

The Impact of Demographic Trends in Higher Education in the 1990s

Carol Frances

Carol Frances + Associates

I want to make two points at the outset of this presentation, one with respect to the use, misuse, and abuse of demographics. It's my firm conviction that the misuse of demographics in the 1970s and 1980s contributed significantly to the economic and political problems higher education will face in the 1990s.

In the 1970s and early 1980s, we were fixated on the decline in the college-age population. We looked at the downward trend in the 18-to-24-year-old population and concluded there was weak demand; in a weak demand situation, we thought we could not raise tuition and ended up underpricing higher education relative to the underlying cost increases.

In the late 1980s and early 1990s, higher education has been forced into a period of compensatory and catch-up increases. We have been visited with a terrible political fall-out and we have college-bashing in the press. The fixation on the demographic trends diverted attention from much more serious financial problems of inflation.

My first message is that demography is not destiny; you consistently underestimate demand for higher education if you look only at the demographic trends. The darker trend in Figure 9 indicates actual college enrollment. The lighter line is enrollment projected, using the composition of the population and the college-going rates as of 1970, 1980, and 1990. If you project college enrollment and college demand on the exclusive basis of demographic trends, you end up with a very serious underestimation of actual demand.

In Figure 10, the bottom line is the trend in the 18-to-24-year-old population. Some people were projecting college enrollment on the basis of that demographic downturn. In fact, college enrollment was much closer to overall economic activity and less closely attached to the 18-to-24-year-old population. You also see that in periods of slowdown you have an increase in college enrollment so that in the long term there's a positive relationship to economic activity. In the short run, you have a negative relationship because it's countercyclical.

Figure 11 shows that there is a very good connection between the number of 18-year-olds and the number of entering freshmen, but that's a relatively small share of the total. It is very significant, of course, because that is the pipeline.

The second thing I want to do is put demographics in its place. I want to say that it is absolutely essential to have the best available demographic data, and that means not looking just at the 18-to-24-year-old population but all of the relevant education groups. Demographics is the essential first step in any analysis of the implications for

financing of higher education. But it is only the first step. We have to put the demographics into context.

Flip to the figure entitled "Putting Demographics in its Place." Our model for college enrollment projections was a two-part model. We revised that in the second generation because we did understand that there was an intermediate college-going rate that captured all the social, political, and economic trends.

We have the privilege of working with the Arizona Board of Regents to help them project college enrollment demand over the next 20 years to 2010. This model is our attempt to put the demographics into context.

Some people who have taken a look at this model have screamed in horror that this is much too complex, but we believe that use of a new technology, system dynamics computer programming, will enable us to take into account these rather complex inter-relationships. It's very important to realize that demographics is not destiny. It's essential to learn about it, but we need to put it into context.

For the bulk of our discussion, I want to think in terms of a matrix. Along one side of the matrix, let's think about the financial domains that might be impacted by demographic trends. This would include demand for college, the need for student aid, costs and expenditures, revenues, fund raising, capital investment, and possibly new technology.

Along the top of this policy, or analytic, matrix, let's think about the major types of demographic trends that could possibly impact higher education. We would consider the overall rates of population growth, migration patterns, changes in the mix of population by age and race, changes that are demographic/sociological in terms of the family structure, and changes in terms of living patterns. So down one side we have financial domains, and on the top side we have types of demographic trends.

I want to go through these domains, developing a checklist of suggestions about the ways that demographics can impact higher education, finance specifically, with an important caveat that Scott emphasized. There is enormous variability across the states, regions, and localities in demographic trends; it is very likely that national data must be supplemented by local market data and local planning data to know exactly what's going on. Use the national data, the national trends, to raise the questions, but they have to be answered with local information.

I'd like to go through these implications and solicit your comments as we go.

Starting with demand for education, what are the demographic trends? Flip to Figures 5 and 6. Figure 5 is birth rates; we simply moved the scale 18 years and we get trends in the college-age population, 18 to 24. So you see the baby boom as it ages up.

There is a dramatic difference in the rate of increase in the 18-to-24-year-old population. In the 1970s, that age group increased almost a quarter, 23 percent. In the 1980s, that group decreased by almost 15 percent. So we went from a 23 percent increase to a decrease of 15 percent.

The 1990s is much more modest. We have a decrease of about 5 percent. Going into the first decade of the next century the trend begins to pick up again to 12 percent but does not reach the peak of the early 1980s.

CLIFFORD ADELMAN: When I'm looking at this, Carol, two questions stick out. Does "higher education" refer to all two- and four-year colleges and are the proprietaries in your universe?

DR. FRANCES: If they're in the Department of Education universe for enrollment figures, they are in my universe.

DR. ADELMAN: Then you're talking about nine to ten thousand institutions; you're not talking about thirty-four hundred. Then we're in a much broader notion than simply talking about college. So the high school graduation rate has to be filtered in. There is also something that Rick Jerue referred to, a certain percentage of people being admitted to postsecondary education without high school diplomas, and you have to look at that as well. I assume all of that is going to be worked in.

DR. FRANCES: Flip back to the figure entitled "Putting Demographics in its Place." We have high school graduation rates in there. Population is in one corner; high school graduation rates are in the second box.

DR. ADELMAN: It's just the trends, the adjusted trends. When I was looking for it, the projections were not . . .

DR. FRANCES: We have trends on high school graduation rates. But we discovered when we looked at those trends that there is a battle between the Department of Education and the Bureau of the Census about what those rates are. When you look at the Department of Education rates over time, they peaked in the 1970s and have declined significantly, enough to be alarming. But when you talk with the Bureau of Census people, they show high school graduations going up.

The difference is, apparently, that the Education Department looks at institutional data and the Census people look at household data. There is a war going on as to who has the best high school graduation rate data. Each has their own opinion. But it is very significant that we figure out who's right because the Department of Education is almost a criminal indictment of the education system; the Commerce data is much more hopeful.

As we were working with the Arizona people they said, "Ah-ha. Even if you have high school graduation rates, that's not enough." They had 31,000 transcripts, and

they discovered that the high school students were tracked. Though they intended to increase the enrollment of minorities 10 percent per year compounded annually, they could not, because minorities did not have the college preparation.

So we added two more boxes. One is the preparation for college-level work in addition to the high school graduation rate, which is significant and very different by race. We've also added as a factor and demand the perceived costs and value of the college education, which we try to get through surveys.

DR. ADELMAN: If you say that they're tracked and there's a certain group that is on the college track, if your universe of institutions is bigger than two- and four-year institutions, then you're also taking account of the others. I assume you have.

DR. FRANCES: Yes.

Now I'm on the first of 30 points here. Flip to Figure 12. In addition to the decline in college-age population that continues, the new element in the 1990s, the 25-to-29 and the older groups, begins to decline. In the 1980s these groups continued to increase, supported the increase in the number of older students that were coming into college. I think with the decline in the 25-to-29-year-olds, we're going to have fewer graduate students, and there are a lot of implications about that.

Flip to Figure 7 and you will see significant changes in the growth of 18-to-24-year olds. I have the changes in 18-to-24-year-olds by race: significant decreases in the white population of that age; almost even for the black; and significant increases, extraordinary percentage increases, for Hispanic and Asian. Hispanics and Asians offset almost 30 percent of the decline in whites.

For the financing that means increased compensatory education to the extent that these students are not as well served by the elementary system; it means more linkages between the K-12 and postsecondary school. It also means that as states and systems and individual institutions look at financial exigency and impose enrollment caps and implement policies of shrinking quality, we are likely to collide with objectives of increasing opportunity for disadvantaged minority students.

On the demand side, we have very significant interstate migration patterns that contribute to the variation in population growth rates. We're going to see greatly increased differentials between in-state and out-of-state tuition. We are nearing full-cost pricing for out-of-state students, and we're going to need to find out from a financial perspective what is full cost, and do we mean average or marginal cost.

Flip to Figures 2, 3, and 4. In Figure 2, a very significant component of total population growth in the U.S. is accounted for by immigration. The composition of that immigration has changed dramatically. Figure 3 shows almost two million people from Asian areas, and the Asians have different sets of program participation. They're more oriented to science and engineering, and many need "English as a Second Language" programs. You also see the straight up line in Figure 4, which is the

recognition of the illegal immigrants that had been coming in over the years.

Trying to look quickly at what the demographics might mean for tuition pricing, we have many more older students and part-time students. There will be issues with respect to the differential between full-time and part-time pricing of student credit hours. In terms of indicators, there will probably be a significant need to look at not only full-time equivalent enrollment but a financial full-time equivalent and see what the trends are and whether there's a differential in the types of services that are needed for the different age groups.

With respect to student aid, we're going to have significantly more minority students and significantly more students from single-parent families that have fewer resources for college. We know that will mean a greater need for student aid, and it is very likely that increases in federal and state student aid are not going to be commensurate with that need. That means more pressure on institutionally funded student aid, and that translates into more pressure on tuition, as we essentially implement the privatization of the tax structure. We are privatizing the financing of student aid by putting it on those who are enrolled in college.

There's another set of issues with respect to student aid. The students at college in the next decade are going to be older and the average age of the older student is going to increase. This produces another set of issues with respect to student aid. It is whether or not older students should have access to existing student aid programs, under which they are not currently well served. Do we need to restructure those programs in order to serve their needs more effectively?

There's another set of considerations that may be significant for those who are concerned with needs analysis. As we have an older population that is living longer, people are going to need more income to support themselves in those added years of retirement. That translates into lower expected family contributions for student aid in the current period, which again increases demand for student aid.

With respect to costs, continuing decline in the college-age population means more recruitment costs. If we have a smaller number of people going into graduate work, we're going to have a shift in focus on undergraduate activities. With fewer graduate students there will be less cost pressure; there will be less interdivisional cross-subsidization of undergraduate with upper division and graduate activities.

It's possible that we will see larger classes, lower costs, and higher productivity with respect to one way of measuring it. It also may mean greater focus on instruction, but it will lead to higher costs in producing research, because you aren't going to have the graduate students to help or as TAs (teachers' assistants).

There's another set of demographic issues with respect to the explosive growth of college enrollment in the 1960s. Faculty was hired to teach them. That faculty in the 1990s is approaching retirement. Now, whether or not there's a shortage—and there's a debate—it is going to cost more to rehire or replace these people; the replacements are likely not to be in the same fields but in new fields where the competition with industry will produce higher salaries than in previous decades. Institutions that are

facing these higher costs of hiring may want to look at their own human resource development policies and try to grow their people from within.

Flip to Figures 8 and 12. Looking at Figure 8, many of the people who look at demographics for higher education don't look at the 5-to-17-year-olds. In the 1990s, there will be exceptional growth in the elementary and secondary level. That's going to mean demand at the state level for resources to educate these students. That's going to put an added squeeze on the state budget and more pressures on higher education, and is likely to lead to increases in tuition.

I was very interested in the discussion on fund raising. I wonder if the older population sees that it's going to live longer in an uncertain world, and if they believe they need more money for retirement, thereby adversely affecting giving.

With respect to the capital investment impact of demographic trends, with more older students you're going to have more commuters, fewer people on campus. I imagine there would be an impact of fewer dorms and more parking spaces needed. As we continue urbanization, edge-city development, we have to use new technology to deliver educational services to people who don't want to battle the traffic patterns to get downtown.

We also have another impact of the past demographic trends on current financial needs. The enrollment boom was accompanied by a construction boom in plant and equipment in the 1960s. The buildings are now old; they need renovation. With the lack of depreciation accounting and reserves for replacement, the capital resources available for that restoration may not be adequate. I suspect that the current impact of previous demographic trends is going to require new capital for higher education; new capital may be hard to raise in the current environment, which will lead to increased borrowing, which will lead to fixed financial commitments and reduced financial flexibility.

I'll close with a couple of thoughts. One thing we should look at is the impact of demographics on the politics of higher education finance. We see significant evidence that the older population is less willing to vote for tax support of higher education or to create borrowing authority. That puts added pressure and continued support for cost containment and quality improvement without added resources.

There's another dimension to this. Population shifts are continuous over the decade but every 10 years demographic trends produce a jolt to the political system with respect to the redrawing of congressional districts. Institutions develop special relationships with their state and national representatives. Those special relationships are extremely important in the financing of higher education, particularly the resources for special projects.

The governmental-relations representatives need to be aware of that redrawing, where the congressional districts are redrawn; an institution could end up in a new district with new people. In addition to lobbying for funds, the representatives of institutions probably should pay more attention than they have to the redistricting process and, if possible, play a role in it.

Look at Figures 1 and 2. Figure 1 documents the ultimate impact of the demographic trends. We're entering an era where we have the slowest growth for any decade in the 20th century. In the 1980s, we consumed a trillion dollars more than we produced. In the 1990s, we have to produce more than we consume. Therefore, we have to increase productivity, but we're trying to do it with a very slow growth in the population and labor force. To increase productivity, we have to increase education and training.

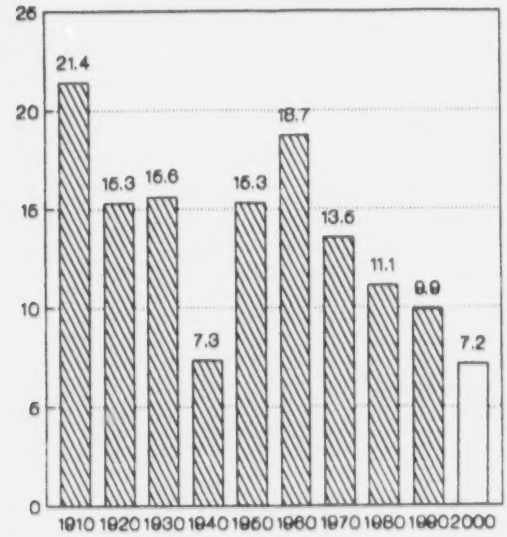
In my view, the most significant overall demographic trend and its impact on higher education in the 1990s is that higher education becomes the nation's number one strategic industry. In a new economic era of intellectual capitalism, higher education produces the essential human resources.

Higher education is clearly an industry where the U.S. has a comparative advantage in global competition. We have to convert the challenge of the demographic trends into policies that reorder national investment priorities toward development of our human resources. Thank you.

POPULATION GROWTH SLOWS DRAMATICALLY

1

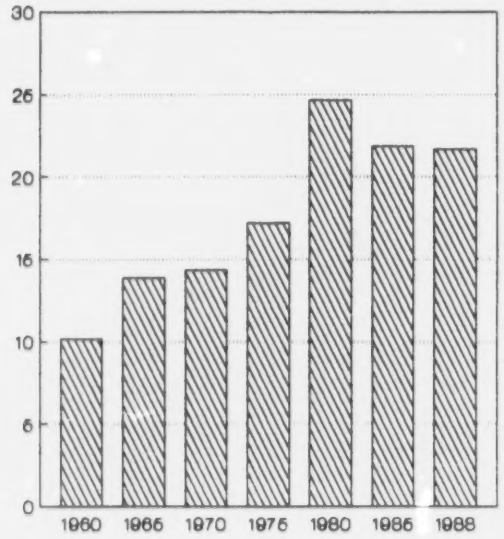
GROWTH OF THE U.S. POPULATION: PERCENT INCREASE, BY DECADE



Source: Bureau of the Census.

2

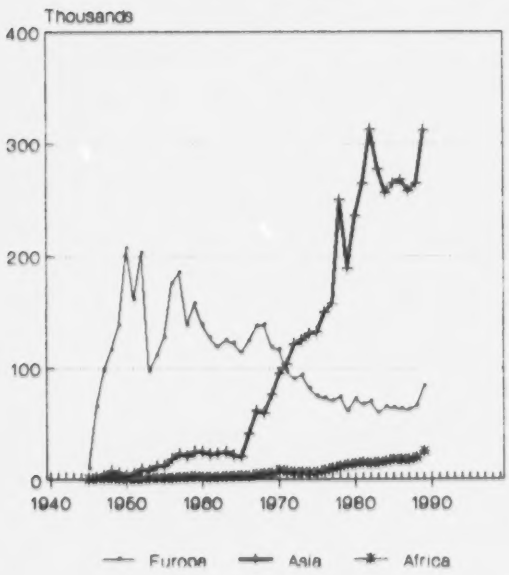
PERCENT OF U.S. POPULATION INCREASE ACCOUNTED FOR BY IMMIGRATION



Source: Bureau of the Census.

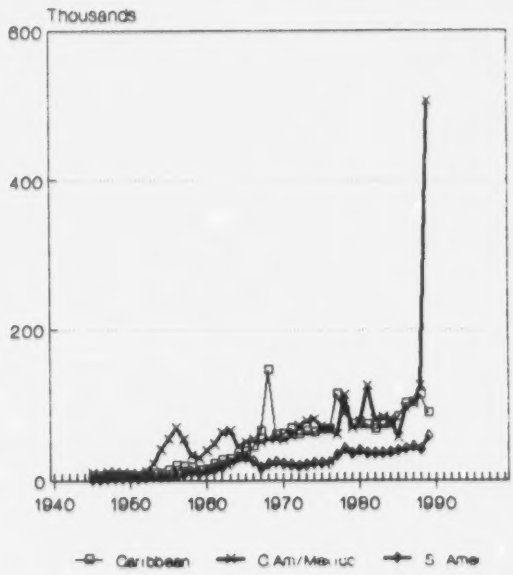
3

NUMBER OF IMMIGRANTS TO THE U.S. 1945 to 1988



4

NUMBER OF IMMIGRANTS TO THE U.S. 1945 to 1988



COLLEGE AGE: WHITES, BLACKS DECREASE HISPANICS, ASIANS INCREASE

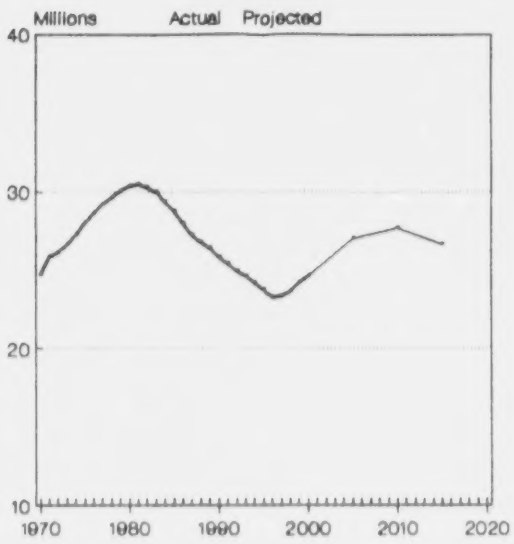
5

TRENDS IN THE NUMBER OF BIRTHS IN THE UNITED STATES

Source: Bureau of the Census.

6

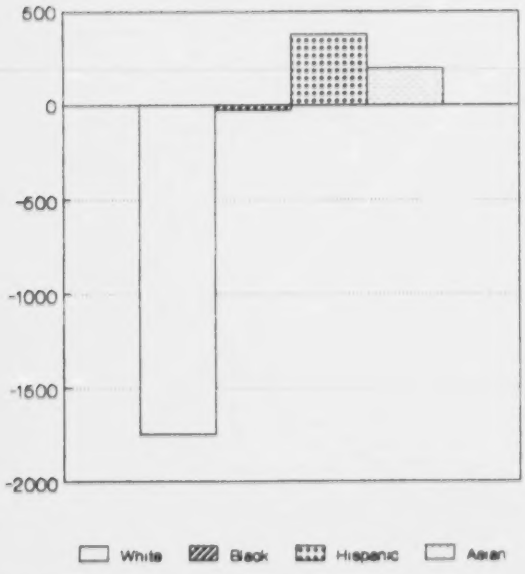
TRENDS IN THE COLLEGE-AGE POPULATION AGE 18-24



Source: Bureau of the Census

7

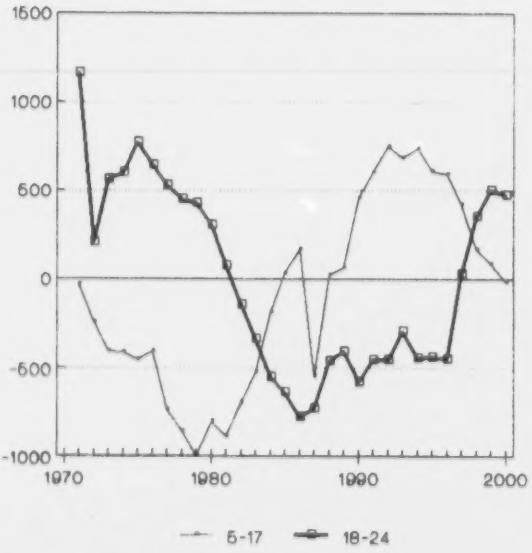
CHANGE U.S. POPULATION, AGE 18-24 BY RACE
Projected: 1990 - 2000



Source: Bureau of the Census.

8

POPULATION TRENDS, BY AGE
Year-To-Year Change
Age 30-34

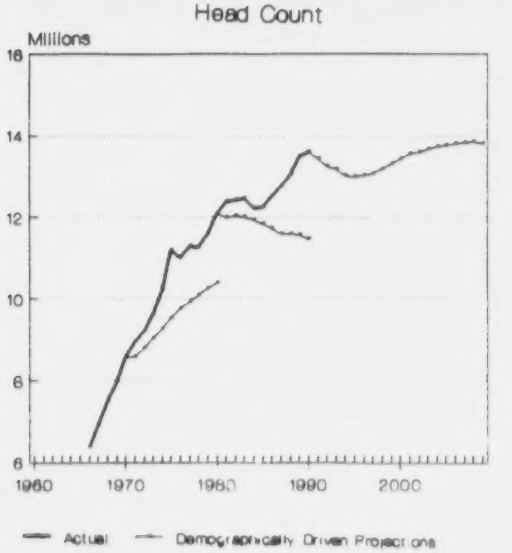


Source: Calculated from Census data.

DEMOGRAPHICS IS NOT DESTINY

9

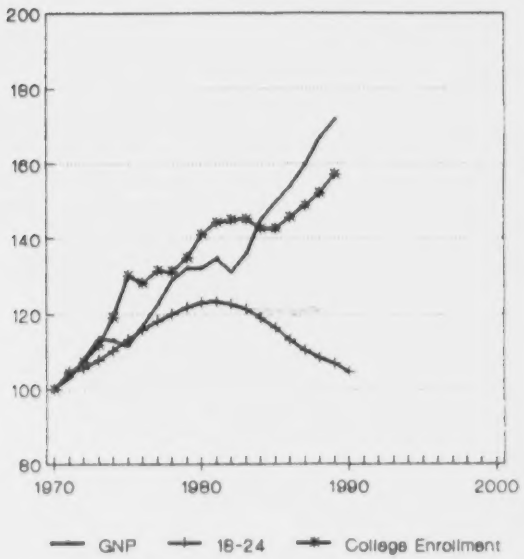
TOTAL COLLEGE ENROLLMENT
COMPARISONS OF ACTUAL ENROLLMENT WITH DEMOGRAPHICALLY-DRIVEN PROJECTIONS



Source: Carol Frances + Associates
Calculated from USED and USDC data

10

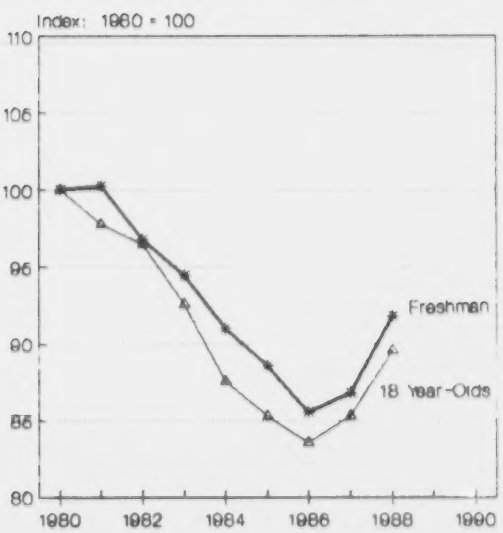
COMPARATIVE TRENDS: COLLEGE ENROLLMENT / GNP / 18-24
Index: 1970 = 100



Source: USDE, USDC

11

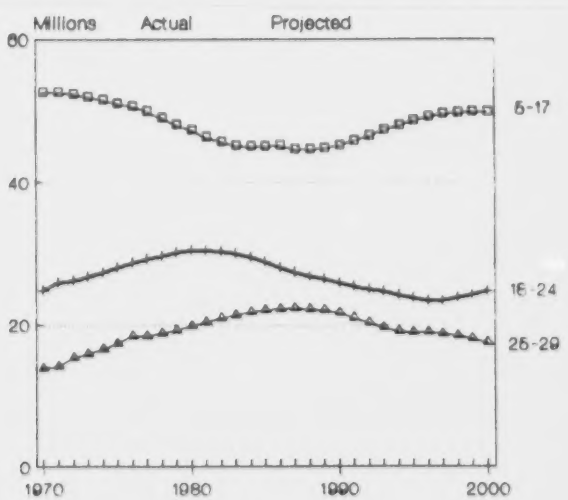
FRESHMAN ENROLLMENT ACTUAL vs PROJECTED



Source: Based on USDE data

12

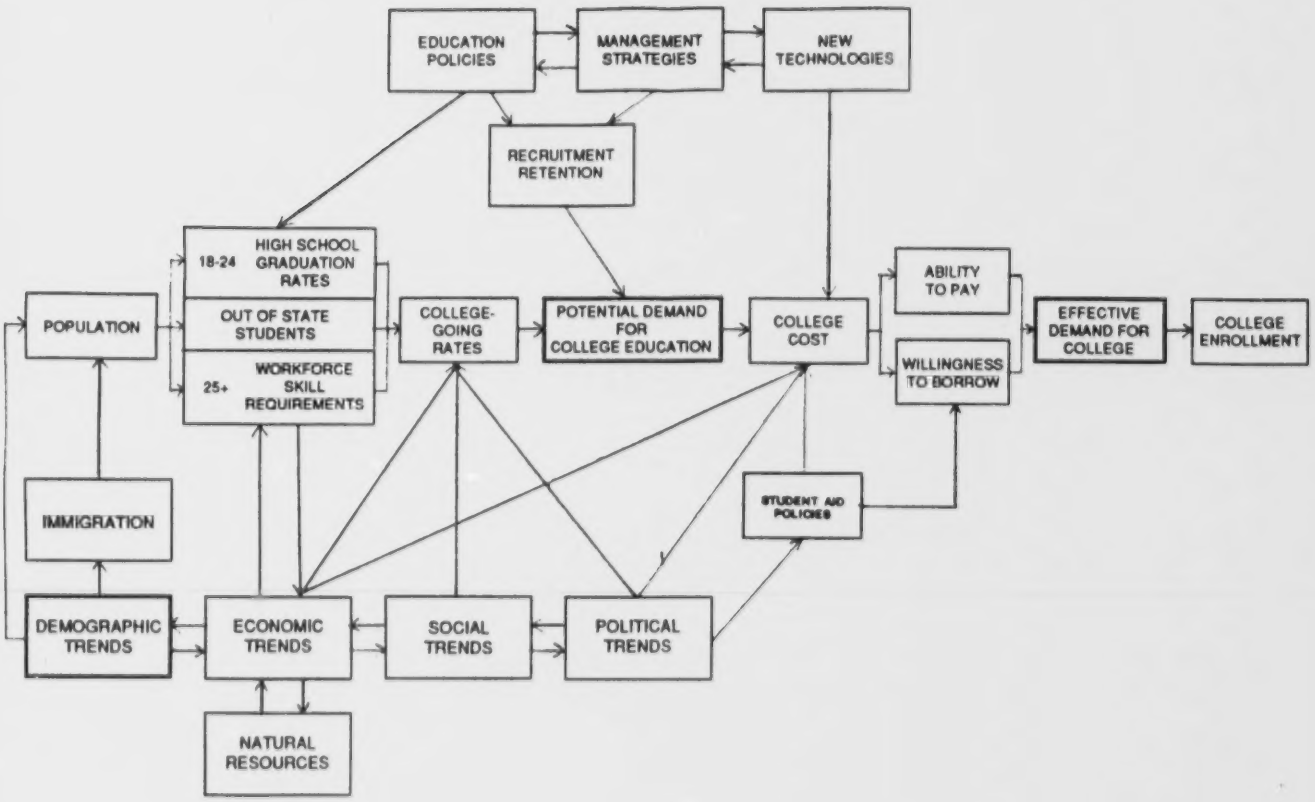
TRENDS IN THE POPULATION, BY AGE 1970-2000



Source: Bureau of the Census

PUTTING DEMOGRAPHICS IN ITS PLACE

MODEL FOR PROJECTING COLLEGE ENROLLMENT DEMAND 1990 – 2010



Work Force Trends and Their Impact On Higher Education in the 1990s

K. Scott Hughes
KPMG Peat Marwick

I want to build on the last theme that Carol described: the significant changes that will be taking place in our society in the 1990s relative to the way we do work, who's going to be doing the work, and the impact that has on higher education.

There are four things I would like to talk about for the next few minutes. The first one is the characteristics of the work force in the 1990s; secondly, the characteristics of work in the 1990s. We are going to be doing things differently than we are now, and I'll give you highlights. The third thing is to look at the implications that changes in the work force and doing work have on higher education as a system; and finally, the implications for managers of higher education institutions and how they're going to have to change their behavior.

First of all, as Carol says, there is a slowing down of the growth in the labor force of this country in the 1990s. There is a shift in the composition of the work force towards women and minorities and away from white males. Our society will become more chaotic with regard to the work force and there will be a number of displaced workers. There will continue to be large variances in employment growth by sector. Some types of labor groupings will increase dramatically; others will actually decrease. Finally, there's a dramatic change in the requirements of the education attainment level for those high-growth occupations.

The data in the figures entitled "Increase in the Labor Force," more than anything else, are going to live with us through the 1990s and actually may come to haunt us. Since the 1970s, there has been a dramatic decline in the number of people entering the work force. We absorbed in the 1970s an increase in the work force of about 28 percent, a 14.7 percent increase in the 1980s, and in the 1990s it's down to 11.6 percent.

As a society, we were able to sustain our standard of living and prosper based upon throwing more men on the job—literally, to a great extent it was more men on the job. Now we're entering a phase in which we'll no longer be able to rely upon growth solely through increases in the work force, but we're going to have to get it through productivity.

A large part of the growth even in the 1980s came as a result of women entering the work force. We went after part of the U.S. population that traditionally had not been in the work force and added them. We've pretty much run that out as women begin to reach a natural plateau at which they will participate in the work force.

The next significant thing is the change in the mix in the work force. Again, it's

dramatic. We are truly a white, male-driven society; there's just no doubt about it. But our day in the sun is fading, and by 2000 it will essentially be gone.

Let me give you a few numbers that you can work with. In 1988, there were about 122 million people in the work force. It will go to about 141 million in 2000. That's over 19 million people added to the work force in that period of time. About 43 million people come into the work force and 23 million people go out. Half of the people leaving the work force, of the 43 million, will be white male. Only 32 percent of the entrants, the new people coming in, will be white male. So 48 percent go out; 32 percent come in. The gap will be filled with white females and minorities.

You can see in the figures entitled "Growth of the U.S. Labor Force" the differences in those who are coming in by race and sex and those who are going and the dramatic changes with white men. Women dramatically increase their position; minority men, minority women significantly increase theirs. Sixty-eight percent of all new entrants will be women and minorities. By 2000, we will have a multicultural work force.

We are entering a chaotic society with regard to the way in which jobs turn over. It used to be one job/one person. My father was certainly an example of that; many of your parents may have been as well, at least your fathers. We're now changing to the point where we will have portfolio careers—we will drop out; we'll go back and pick up advanced degrees; we will go for retraining; we will, on our own volition, change our occupations and avocations like we have not done before.

There's also going to be changes in the composition of the way in which we do work in organizational structures through corporate mergers, acquisitions, increased international competition, down-sizing, plant relocations, and closings. We will see a dramatic movement in the way in which work gets done in the 1990s, making a tremendous impact on the number of jobs that individual workers will have.

A shift will occur as we move away from work that is not based on educational attainment to work that is based on educational attainment. We will see a dramatic change in the education required for occupations. The figure entitled "Projected Growth of Employment in Selected Occupations by Level of Educational Attainment" shows you the number of years of college you need by type of occupation. In the figure entitled "Correlation Between Educational Attainment and Growth Rates of Selected Occupations," you can see the high correlation between educational attainment level and the growth potential for those jobs requiring high education attainment levels.

If you look in the lower left corner, you see those kinds of occupations that will not grow very much in the 1990s. Those are the jobs that do not have a very high education attainment level. As you drift higher up towards the upper right corner, you see those jobs that will be growing significantly in the 1990s and the education required. In this case, we're using a measurement of four years of college, which is a high level of attainment.

That is a thumbnail sketch of what's going to be happening in the work force in

the 1990s, when there's going to be a dramatic shift from white males to minorities. There's going to be much more chaos with regard to the number of jobs that we'll hold in our lifetimes; there will be much greater demand for educational attainment. Everything in those trends says that there's going to be increased demand for higher education services.

We want to look at the way in which work is going to be done differently in the 1990s. Mike Walsh talked about some of these trends last night. The first one is a transition from an industrial society to a service-based information society. We all know that. But imbedded in that concept is that power is shifting to those with knowledge. If you read Alvin Toffler's *Power Shift*, it's a great treatise on how power is replacing wealth, which replaced violence.

Eighty percent of all jobs in 2000 will require some level of cerebral skills rather than manual labor. Interviews that we conducted with corporate leaders as part of this study asked them what were going to be the important skills for the 1990s. Ability to communicate, computer literacy, human interaction skills, and the ability to be flexible are the characteristics that are going to be in demand and will make us successful and productive in the 1990s. Finally, the ability to respond to a rapidly changing environment.

The second point is the flattening of the corporate organizational structures. The demise of bureaucracies is going to happen in the 1990s. It is already happening as a result of the tremendous advances being made in communications and technology, which are eliminating the need for hierarchical structures and little boxes in which work gets defined and compartmentalized. Through the advances of communication theories, networking, and technology we are able to collapse organizational structures and remove middle layers.

Let me give you one anecdote. On January 16th, as the balloon went up on the war in the Persian Gulf, we at home knew more, through satellite transmission and instant communication, about what was going on with regard to the war than the upper echelons of the military establishment. It was taking the military several hours to find out through their chain of command what was going on. That will happen and is happening across all of our corporate bureaucratic structures today, to the point where only through censorship and restructuring are we able to handle that kind of instant communications.

Peter Drucker says that in less than 20 years our administrative layers will shrink by one-half. We're going to eliminate broad classes of work. Collection, processing, consolidation, interpretation, and monitoring of information will be eliminated in the 1990s as we move to more flatter-networked organizations.

Listen to those words again; I'm going to say them one more time because we're going to come back to productivity improvements. Collection, processing, consolidation, interpretation, and monitoring of information—virtually all transaction processing.

The next thing you'll see is corporations moving more and more away from

employment to contractual services. We're already seeing that with the new organizational environment and structures that are being created. They're not doing it with fixed labor; they're doing it through contracted services, creating much more flexibility in the work force.

All of this leads to the conclusion that there is a need for lifelong learning. That is the end result of all of these phenomena.

If you collapse the possible potential unmet need for higher education demand, Carol has put some of these kinds of numbers together. To a large extent, some of the numbers may be more soft than firm, but they give you an analytic framework, a conceptual framework, for where there is a tremendous demand for unmet educational services directly as a result of changes going on in the way in which we do work.

You're going to have a whole group of people who are underskilled and need new skills, underemployed, dislocated workers, re-entrants to the work force, new entrants coming into the work force, underprepared workers, women entering the work force, disabled people of working age, and finally, immigrants. That is the demand function for higher education in the 1990s, and it sure is a lot different than 18-to-22-year-olds.

Let's move quickly to some of the impacts that the changes in the work force and its unmet demands will have on higher education as a system. I'm going to skim through these and then we'll open it up for discussion.

We'll need to prepare new entrants for the work force with the skills necessary in the information society—computer literacy, communications, and technical skills. We have the same situation with displaced workers who will need to rechannel their educational demands to get a new position in the work force. There's going to be a tremendous demand for assessment and evaluation of individuals to help them reprogram or redirect themselves in the work force and become productive. There will be basic skills teaching involved as a part of that.

For those in career transition there is going to be a tremendous demand for re-entry programs to provide facilities to take people from one career to another—hands-on, close, personal treatment of individuals.

Start keeping in the back of your mind who's going to be paying for all of these services. We'll come to that.

There needs to be much greater flexibility in the way in which and when we offer educational services; where we offer the educational services; and under what sets of conditions. There's also a movement of women going after advanced degrees. Women in their forties are going back into the work force with a drop-out of 20 years. Frequently they're doing it for increased income earning.

Finally, there is the concept of professionals who have been working for a long time in the same job. I have been working now for 25 years doing the same thing; I'm tired. I'm ready to drop out; I'm ready to try something different. I'm ready to go back to school for a couple of years. I am a potential applicant for higher education

services.

Over the weekend, I spent time with a friend who is in the top 5 percent of all dentist wage-earners in the country. Top 5 percent. He's making good money. Great practice in the suburbs of Washington. He's going to drop out. He's going to collapse his business; he's going to take off for two years; he's going to travel around the world. He's going to come back and set up a business doing something on a much smaller basis and he'll still be successful.

Again, look at the implications. We are now moving into an age in which we have to be much better in focusing on what educational services we're providing and to whom and for what benefit. That leads us to differentiating our services. Many small, private liberal arts institutions are already doing a very good job of this. One reason they survived is that they did an exceptionally good job of defining why their educational product is important, and they're selling it to their constituencies.

Community colleges are doing the same thing. Large major research universities are. We will continue to see differentiation of the providers of educational services as they relate to the specific demand functions that we have been talking about.

The next point is increased accountability for services provided. If you are a community college in the inner-city of Los Angeles, and you have single-parent mothers coming to school in the evenings after they've worked all day, and they are coming solely for the purpose of getting training so that they can become a health technician, there is a tremendous responsibility on the part of that provider to provide the proper and correct level of educational services to that individual. Up to this point in time we have not accepted that responsibility of making sure that the product we're offering is received.

We're going to move into areas of much greater accountability. We'll move into areas of assessment to make sure that the consumer of the educational product is actually receiving the benefits; also, we will begin providing a warranty on educational service, or money back guarantee.

Those are tremendous changes in the whole concept of educational services. Right now, there's not a contract with regard to the student who comes and receives a service and the provider who gives the service. There will be a certain achievement attained with regard to that transaction. There's no quid pro quo and there's very little responsibility. That will change dramatically in the 1990s.

There will be many more cooperative arrangements among the academic institutions as they try to consolidate their capabilities. There will be increased cooperative arrangements with businesses. Businesses will be more interested in contracting for training, human resources skills, skills upgrading, as they find out that their workers are no longer disposable and that they have to train their workers. The way in which they drive productivity is not to get new workers but to take existing workers and do better with them. Educational institutions are poised and beginning to provide those skill increases to businesses.

That is going to be one source where we'll find increased revenue streams for

higher education, in direct transactions with businesses for meeting the increased needs of their work forces.

This has all boiled down to how we, as managers of educational services, have to change our behavior. I have four points for that. Not surprisingly, these are what Mike Walsh talked about last night.

We didn't hear anything this morning about how well we're managing higher education. One of the reasons why we're not managing higher education very well is that we have not understood how to make the organization as fuel-efficient as it possibly can be. We have not had the impetus or the skill sets or the management philosophies to do that.

I know of examples where my clients are still expecting students to wait in six lines to get registered. Where vendors are not delivering goods to universities because they're not getting paid on a timely basis. There are some fundamental things that universities and colleges are not doing.

That is the point that Mike is going after with Stanford. He's saying, "We'll get the business practices in order first before we tackle the more difficult academic ones."

My next point is the increase of quality of services to clients. We need to have a clearer definition of what we're providing and why, and we need to introduce the warranty programs that I was mentioning. The increase in use of technology and communications is how we'll flatten the organization, lean it out, reduce the amount of time and energy going into transaction processing.

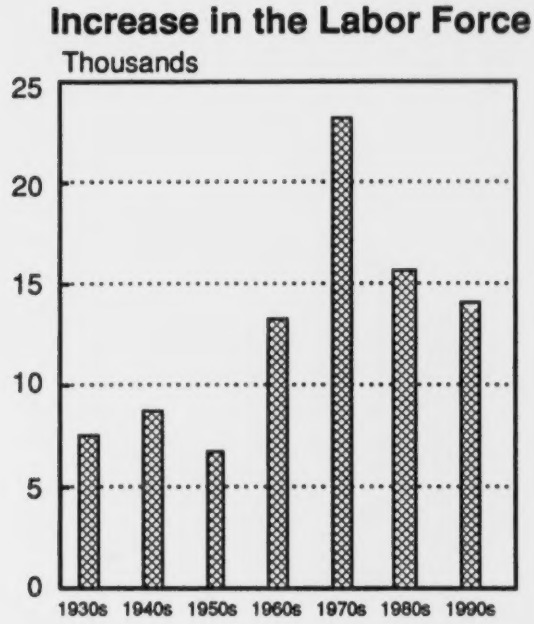
We'll consolidate library resources and begin delivering instruction. We've started and will continue to deliver instruction at a much broader range of physical places through localized centers, satellite transmissions, videotaping. We will ultimately reduce the cost of instruction by taking better advantage of the technology and communication skills.

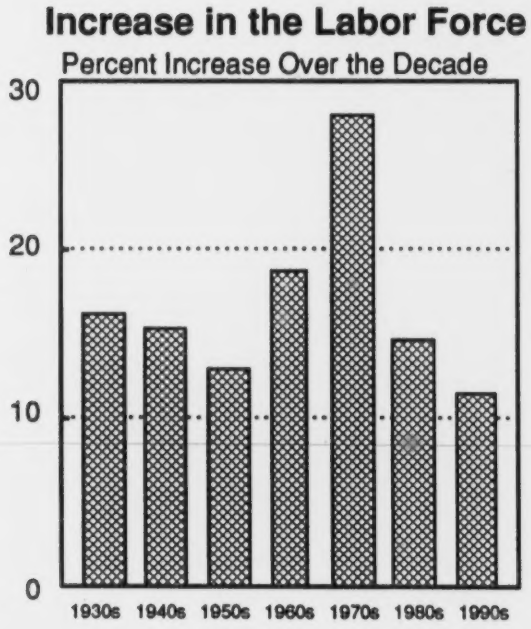
We will be forced to drive for labor productivity and efficiency improvements through increased quality of output and through some of these other factors that I was talking about that eliminate and reduce costs of processing and administration.

You don't get to this point until there is an economic incentive. The only way you're going to fund the needs for those new educational demands is going to be through these kinds of efficiencies and productivity improvements and greater accountability.

Thank you very much. Both Carol and I are open for any questions you may have.

TRENDS IN THE LABOR FORCE

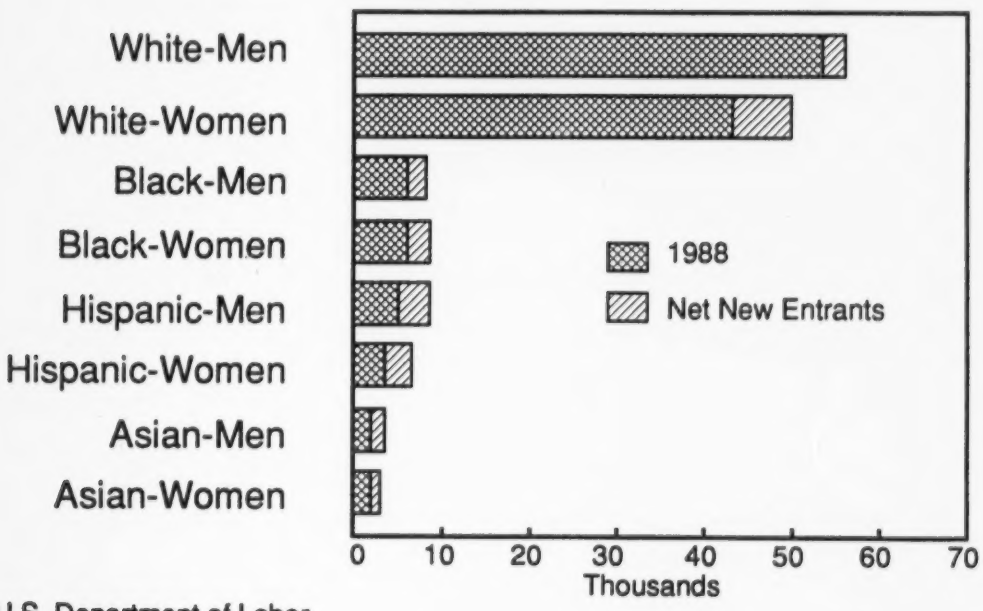




Source: U.S. Department of Labor

GROWTH OF THE U.S. LABOR FORCE:

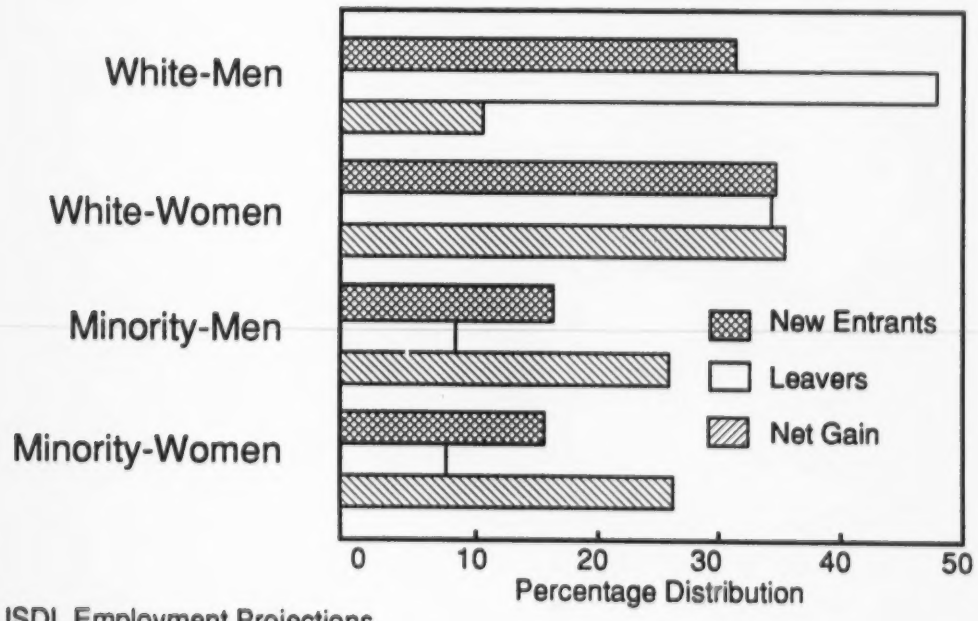
1988-2000



Source: U.S. Department of Labor

CHANGES IN THE U.S. LABOR FORCE

1988-2000



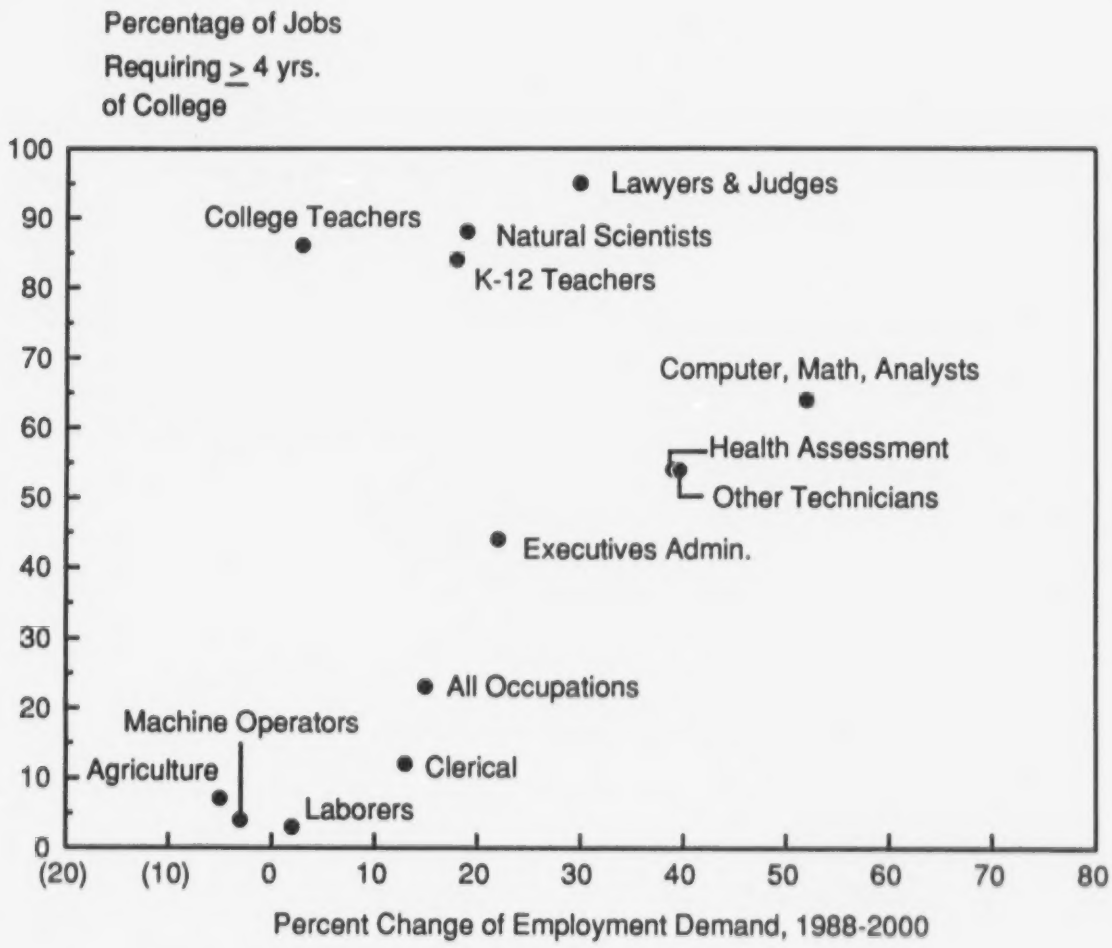
Source: USDL Employment Projections

PROJECTED GROWTH OF EMPLOYMENT IN SELECTED OCCUPATIONS BY LEVEL OF EDUCATIONAL ATTAINMENT

Occupation	Percent Change 1988-2000	Percent Distribution of Total Employment By Years of School Completed: March 1990			
		Less Than High School	High School	1-3 Years of College	4 or More Years of College
Computer, math, analysts	52	0	12	24	64
Other technicians	39	1	18	27	54
Health assessment	38	2	8	35	56
Health technicians	34	3	35	40	22
Health service	34	23	51	22	5
Lawyers and judges	30	1	3	2	95
Computer operators	29	5	46	33	16
Personal service	27	19	53	22	7
Engineers	25	1	10	14	75
Health diagnosing	24	2	3	2	93
Other professional workers	24	3	16	19	82
Food preparation	23	37	42	17	4
Protective services	23	12	43	29	16
Executive, administrative	22	5	27	24	44
Marketing and sales	20	13	39	24	23
Building service, cleaning	20	41	46	10	3
Engineering technicians	22	4	35	39	22
Natural scientists	19	2	4	6	88
K-12 teachers	18	1	7	8	84
Construction trades	16	25	53	17	5
Total, All Occupations	15	16	40	21	23
Other clerical	12	9	51	28	12
Mechanics	13	21	55	19	4
Machinery and vehicle operators	12	29	53	14	5
Clerical supervisors	12	4	45	26	24
Mail clerks, messengers	10	10	48	28	14
Secretaries	10	4	54	33	10
Precision production	3	23	52	18	8
College teachers	3	0	4	10	86
Laborers	2	37	47	13	3
Financial recordkeeping	1	5	54	28	13
Machine operators	(3)	34	52	11	4
Private household workers	(5)	50	34	12	4
Agricultural, forestry, fishery	(5)	36	44	12	7

Source: U.S. Department of Labor, George Silvestri and John Lukasiewicz, "Projections of Occupational Employment, 1988-2000."

CORRELATION BETWEEN EDUCATIONAL ATTAINMENT AND GROWTH RATES OF SELECTED OCCUPATIONS



Source: U.S. Department of Labor, George Silvestri and John Lukasiewicz, "Projections of Occupational Employment, 1988-2000."

Questions and Answers

LAUREL MACFARLAND: I'm Laurel MacFarland from the Brookings Institution. I wanted to ask both of you a question. I was interested in both of your talks because, on one hand, you seem to talk about the changes in demand for enrollment in a fairly homogenous fashion. On the other hand, in one of your last comments, Scott, you were talking about the growing differentiation in services and that we'll see different institutions serving different needs.

I was wondering if both of you would comment on the fact that a lot of the changes in demand and increases will be in certain institutions, proprietary schools, community colleges, and so forth, rather than in four-year institutions. These institutions are financed very differently, go to the market in different ways, and are able to charge tuition in different amounts, and also the federal government is trying to isolate these institutions for different aid programs, particularly student aid. Where do you think this is all going once you get below the level of the homogenous demand for enrollment and the impact on finance?

MR. HUGHES: Given the amount of time, it's difficult to describe the differentiation in demand for educational services and how those demands will be met by different kinds of institutions.

There will be a broad variance in demand across types of institutions, regions of the country, and urban or rural areas. There's nothing homogenous at all with regard to educational demand in the 1990s. I think Carol may say the same thing.

One of the reasons why Carol's model is so important is that individual institutions need to consider all of the independent variables that are ultimately going to drive their enrollment levels; everything that we've talked about for the last hour is included in that model.

I, for one, believe that community colleges are going to be the big growth business of the 1990s, particularly in inner-urban settings. And I think that's going to come about not so much by federal policy. When you take a look, again, at the single-parent female going to community college in the evenings or taking less than six units of class, thereby not qualifying for financial aid, I think that's going to be where a lot of demand for educational services is going to be. Businesses are going to pay for a lot of those services as well, besides the federal government.

Carol, do you want to talk about it?

DR. FRANCES: If you look at changes in demand for higher education by field, we've already experienced extraordinary shifts in demand and responsiveness on the part of the institutions. The financial impact is that we're shifting out of low-cost programs such as education in foreign language and into high-cost programs that require high

cost to compete with business to get people into. So I think we've already begun to see the differentiation.

Institutions are quite flexible—or perhaps they should be more flexible—in responding to that demand. We created a sector out of the GI bill. It responded to the needs in that era, but it was a factor in terms of the time. The availability of student aid is a factor in the growth of the proprietary sector right now.

PETER SMITH: This isn't a matter of disagreement, but I don't see how in the world these things are going to happen, through changed regulations, different incentives, different organizational cultures, different institutional structures, different instructional models, or different evaluation models.

If you look at the profile of higher education today versus 40 years ago, it is obviously a dramatically different enterprise. Yet, the whole system is still driven on the perception of prestige. There are two dominant models of success that have prestige. One is major research universities; another is small, private liberal arts colleges. They survived because they've continued to do what they always did and have become more and more special simply by contra-distinction.

You now have 85 percent—I'm making these numbers up, but I'll bet you I'm close—of the institutions and students who do not fit the dominant prestige model of higher education. But you have 100 percent of all the benefits, the psychic benefits of faculty self-esteem, institutional self-esteem, student self-esteem, community self-esteem, board self-esteem, employer self-esteem. You could take a kid and put him in Princeton and leave him there for years. Leave him in a phone booth, bring him out, give him a diploma, and he probably would have evolved, given that he read the phone book in the process, and he would go out and get a hell of a job because of the degree. It is a prestige-driven system.

DR. FRANCES: And the network of alums hiring . . .

MR. SMITH: It goes way beyond that. You could put him on Mars and he would get a better job because of the diploma.

My concern is this. Where is the evidence that we are working on a reward system or a financing system or a new organizational structure that is going to respond to the emerging need? The corporate people I talked to are going to do it themselves. They're not going to waste time with higher education.

My own deep concern is that when we talk about the management structures, are even 10 percent of our colleges ready to hire by contract, teach technically by video and remote instruction? Do we do it in places that are far away from campuses and have faculty and other organizational cultures at home that are going to tolerate that? We have new kinds of students with new ways of counting and learning,

competency-based education. Are 10 percent of our colleges ready to do that? I don't think 2 percent are.

What I don't hear and what I would be interested in your response to is the evidence that higher education as we know it today will develop new accountability structures that will reward the work that 85 to 90 percent of the institutions do where the only allure of education is the quality of the learning that goes on. It isn't the football team, it isn't the prestige. The only hold they have is the perceived value of what they get there.

The change around the institution is so dramatic that we are going to see havoc in inter-institutional relationships. We're going to see an increase in politics between sectors like you have not imagined beforehand. We're going to see warfare on the campus between the new curriculum—and I'm not talking about politically correct. I'm talking about job skills. We're not talking about intellectual capital; we're talking about something very different.

Do you see any evidence that that is going to happen out there?

DR. FRANCES: I've just spent a year working with the National Council for Occupational Education and with individual institutions. Where you didn't have it at the institutional level you may have had it with a driver of a particular department or particular people who saw it within the institutions. But if we move closer to value added rather than prestige as the measure of output and work with business to at least explain what business needs out of the educational system, make that clearer and work with the media so that they understand the range and diversity of the institutions and don't always select only the prestigious institutions to follow, there may be some hope.

Scott?

MR. HUGHES: I'll make one comment. I agree with everything you say. There will not be a rational transition from one mode of education to another. It will be a cultural revolution.

Clark Kerr says this is going to be the most dramatic change in higher education this decade since the Second World War—the GI Bill. We are entering a phenomenal period of time. We're seeing it in California. Let me give you some ways in which this may unfold.

The University of California educates 175,000 people. Community colleges in California are probably at 1.5 million. The ethnic minorities and the women are going to community colleges. We're getting ready to enter redistricting in California; there's going to be a dramatic shift in the economic and political power and in who gets funding.

University of California is going to hold its own. We have 175,000 people now and

maybe 190,000 people in 2000 at University of California, and all the values and everything that goes on about those major research universities are going to stay the same. What I'm talking about, though, and I think what Carol is talking about is the huge demand function above that is going to be met by other enterprises.

I'll close with this. Fax machines weren't worth anything in this country until they reached a certain critical mass. At some point in the 1990s we are going to reach a critical mass with regard to the educational demand function, and then politically and economically there's going to be a rush in the movement to meet that demand.

MR. SMITH: I think we know what to do, but I am, with some exceptions, not confident that we will be able to make the changes. I think it's going to be enormously difficult to cope with the demand, as I understand it. When the public sees that kind of dysfunction in higher education, it's like trying to predict what's going to happen with the Soviet Union.

DR. HANSEN: I hate to cut this off because this is so interesting, but because we have a luncheon speaker I need to let you go to the next event.

Prognosis for Federal Financing of Higher Education

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Introduction

Caspa Harris

National Association of College and University Business Officers

It is my privilege to introduce Christopher Cross. He holds a bachelor of arts degree in political science from Whittier College and a master's degree in government from California State University at Los Angeles. He has been in the government since 1969. He has had a variety of very important positions. He was named the Deputy Assistant Secretary for Legislation in the Office of the Secretary of the Department of Health, Education, and Welfare. He is one of the individuals who advocated the creation of the National Institute of Education. He was appointed by President Bush in 1989 and he is now the Assistant Secretary of Educational Research and Improvement.

Help me welcome Mr. Cross.

Welcome

Christopher T. Cross
Office of Educational Research and Improvement
U.S. Department of Education

I should amend the introduction to clarify I haven't been in government all that time since 1969. I was in the government about 10 years. I spent the major part of that time working on the staff of the House Education and Labor Committee, where one of the people I worked with is the speaker who will follow me today, Senator Jeffords. I had an opportunity to come back in the government about 18 months ago.

On behalf of the Office of Educational Research and Improvement in the Department of Education, I want to welcome all of you to the conference. I am pleased that in this meeting you have an opportunity to talk about your experiences and the insights that you have gained and how you can put these to work to make this conference a critical turning point for American higher education.

I want to thank The College Board and NACUBO for cosponsoring this symposium with OERI. We appreciate the time, the energy, and the investment that you have all made in turning this symposium into a reality. You have certainly put together a fine slate of excellent speakers, panelists, and papers.

College costs and institutional quality, as well as rising tuition rates, financial aid, student access, educational attainment, and the financing of research and facilities at institutions of higher education have all been issues of long concern to the Department. Although we have had federal support of higher education since the Morrell Act over 125 years ago, it is only in the last 25 years that we have had large-scale aid, particularly aid directed towards the support of students. Indeed, it is almost 20 years since the basic grant program, now called the Pell program, was passed. Much has changed in these past decades and today we recognize that the time has come for a fundamental review of federal policy with respect to higher education generally and the support of students specifically.

We have a nation today that is firmly committed to the improvement of education and to the notion that education is vital to personal development, economic fulfillment, and our international status as a nation. We have national goals for education, which, while focused primarily on elementary and secondary education, have enormous implications for higher education. For example, where will we find the teachers we need to improve instruction at the precollege level? And what is the role of higher education in fulfilling the goal of lifelong learning?

We are also faced with demands from political and business leaders for improved productivity at all levels of education, specifically at the higher education level. All of these factors have combined to create a lot of confusion for federal programs and policy makers and have created added pressure for colleges and universities. One of

the results of this is the passage of such things as the new law on student right to know, which was passed at the end of the last Congress.

I believe that times are right for a concern for financing and management in institutions of higher education by examining some of the best and most current research on higher education finance. By engaging in spirited dialogue with the speakers, panelists, and each other and by having all of us, policy makers, practitioners, researchers, corporate leaders, association and foundation representatives, and state officials, collectively explore the issues and share our new-found insights with our colleagues at home, we can meet the challenges before us and secure a brighter future for American postsecondary education.

I am pleased to have you here today and I look forward to hearing the rest of your conference.

Thanks.

[Applause.]

MR. HARRIS: Thank you very much, Chris.

Tomorrow, the National Commission on Financing Postsecondary Education has its first meeting. Today, by a happy coincidence, we are fortunate to have as our luncheon speaker the man who helped establish that commission, Senator Jim Jeffords of Vermont.

Senator Jeffords has a long-standing interest in higher education. His legislation four years ago established the commission that will assess the responsibility for future funding of postsecondary education by examining the roles of government, students, families, and institutions of higher education. When he was ranking Republican on the House Education and Labor Committee, Jim Jeffords was instrumental in moving an amendment to the National Science Foundation legislation that authorized funding to revitalize the research capabilities of our academic facilities. As a result of his work, the Academic Research Facilities and Modernization Act became law.

As House member, Jim Jeffords also was vigilant in working to ensure that student grant and loan programs were equitably administered and accessible to all those in need. His work was especially evident in the PLUS Supplemental Loan Program, where his efforts helped make parental and student loans more affordable.

Elected to the Senate in 1988, Jim Jeffords succeeded another champion of higher education, Vermont's senior Senator, Robert Stafford. Senator Jeffords is now a member of the Senate Labor and Human Resources Committee and is a ranking member of its Labor Subcommittee. He is also a member of the Environmental and Public Works Committee and the Senate Committee on Veterans Affairs. The Senator maintains a strong interest in higher education through his membership on the Senate Subcommittee on Education, Arts, and Humanities. Before coming to Washington, Senator Jeffords was Vermont's attorney general. He is a graduate of Yale University and holds an LL.B. from Harvard Law School; he is a captain in the U.S. Naval

Reserve.

The Senator has indicated that he did not come here to hear himself speak. He is going to give a brief speech, but the importance to us and to him is for him to hear you. With that, join me in welcoming Senator Jeffords.

Financing of Research, Scientific Instrumentation, and Facilities

Senator James M. Jeffords

(R-Vermont)

It is a pleasure to be with you. This is a very interesting time for higher education. I will have some remarks to make and then I will open it up to questions.

I came just amazingly close to being the ranking Republican on the Education Subcommittee -- in my first term. You might wonder how that could possibly come about. There are some committees that Republicans don't really enjoy getting on. One of them is the one that deals with all the business/labor issues. You are always voting against the things that everybody else seems to want. I was the most senior coming in, other than Trent Lott, and so I was standing right in line and the position was open and I was chomping at the bit to be the ranking member and all of the sudden Nancy Kassebaum took a look and she said, "Oh, my gosh. If I move over to that committee, I can become ranking on the Education Subcommittee." What was my reward for that? I am now ranking on the Labor Subcommittee with Senator Metzenbaum. That is not exactly what you call second prize, probably twelfth prize. Anyway, it has been a fun time, to say the least.

I am going to talk with you a little bit about the financing of research and scientific and instrumentation facilities. Before I do that, I want to talk more generally about education and the future of higher education.

We are all involved with the Gulf War right now, and I get up early in the morning and go to bed late at night watching that war. Of course, it is critical to us right now, but we have to look beyond that war and remember where we were a year ago when we had a whole new world order. Certainly the Gulf is a part of that, but the Soviet Union, at least at that point, was embarked upon a whole new attitude towards world politics and life; things seemed to be moving right along. They still are.

I don't believe that there is anything that has deferred us from that, but we do have to look beyond the Gulf War, which hopefully will be over very quickly, and understand that, whereas the military wars are over, the economic wars are right on the forefront. The days of being able to sit back, as we have in the past, of being the number one economic power in this world, have diminished. We have watched our standard of living diminish over the past few years as our economic competitors have taken advantage of our need to strengthen our military.

What can we do about that situation? Before I mention that, there is another area where we are going to see economics play a role, which may lead to haves and have nots. As long as we have haves and have nots, we are going to see frictions; thus,

world leadership on our part is to do what we can to diminish the number of have nots and to strengthen the haves. At the same time remember that we have to be the haves. We have to maintain our economic strength.

How do we do that? We do it through education. We are not that many, you know. We are only 250 million people out of the billions in the world. Education is the key. Right now what I am concerned about, and my main message here, is that we cannot let anyone forget that. There is a tendency during this budget period to become consumed with the deficits and the need to live within certain constraints that have been imposed upon us by the Administration and the Congress. We forget that we have to speak out and make sure that the goals of the country can shift in the terms of budget, as well as in the terms of need.

The need for higher education and education generally is recognized to be a top priority of this country. Right now, though, the constraints that are imposed on us by budget thinking make it impossible to readjust priorities unless we fight. That is the message that I have for you today: we have to remember that we cannot let the budget dictate what we do.

As the world is rapidly becoming one trade zone where nations must compete to survive, to maintain a standard of living based on higher wages, each of us must outproduce our foreign competition with equal or better products. Trained, efficient employees who can learn, perform, and grow on the job will stabilize costs and bring quality products to the marketplace.

A majority of workers entering the labor force for the first time over the next years will be women and minorities. Providing quality education to traditionally disadvantaged students will continue to be a priority. Employers are ready and anxious to hire those who can acquire the education and skills needed. Skill shortages are occurring. We have large numbers of people at risk of economic disadvantage because they do not have the combination of education and skills needed to work in today's technological environment.

Young people must have the opportunity to be trained and educated to prepare them for tomorrow's jobs. They must be able to grow and to change with the evolution of technology and the world economy. Knowing how to read, comprehend, compute, reason, and analyze are fundamental.

Cuts in funding and shifts from grants to loans have raised concerns about student access to higher education. Shortfalls in funding have further eroded the capability of universities and colleges to modernize and revitalize their science and math facilities.

Higher education is vital, as I have mentioned, to keeping the country economically competitive, as well as to providing an opportunity for our young people to gain knowledge and skills for self-sufficiency. Federal financial assistance has allowed millions of students the opportunity to forward their education. Often, student assistance has targeted the disadvantaged, who have previously been excluded from the mainstream of American life, and brought them into the nation's schools and campuses.

At a time when the United States faces increased competition from abroad and demographic changes at home, we must ensure that our young people continue to have these opportunities and access to higher education.

Let me go over some of the problems that have been created by the fact that we are having so much dictated to us by the budget problem. Sadly, the budget woes of the country have taken their toll on the opportunities available to young people. Changes in the budget procedure, as well as caps on domestic spending, have impacted the future of our next generation.

First, let me give you a quick summary of the changes in the budget package. A lot of these escaped notice as this whole big package rolled by us last year. Amendments to Gramm-Rudman placed caps on discretionary domestic funding. Effectively, those amendments removed the option of cutting defense spending in order to increase domestic outlays. We walled it off.

If Congress increases spending for education, the money will have to come out of other domestic programs, such as AIDS research or housing or other critical needs that people have a tendency to focus their attention on. Included with the Budget Enforcement Act is the treatment of the federal credit activities. Beginning in fiscal year 1992, the Federal Credit Reform Act provides that the budget cost of credit programs be long-term costs to the Federal Government on a net value basis.

In other words, appropriations must be enacted to cover the cost of the direct loan and loan guarantee programs for the life of the loan. That means the defaults have to be included up front. I am not sure and we haven't been told what it means yet, but it obviously can be a very serious problem.

Another aspect of budget reform is the pay-as-you-go provisions. While this method is fairly self-explanatory, the effect is a little less clear. In general, it means that no program can incur new costs without including methods to finance those costs, whether by cutting other programs or levying new fees to sustain the price tag. This will certainly be unwelcome news for new entitlement programs.

What is the President's budget outlook? What has he shown us as to what is going to happen from his perspective? Even with a gloomy outlook, the President's budget proposed significant increases for science and technology. He recognizes that this is so critical to our future. While this is welcome news, the increases are mainly in the form of grants to individual researchers, not to institutions.

The Administration's budget represents an 8 percent increase for basic research, or 3.9 percent above the inflation level. Some highlights of this budget proposal are as follows: an increase of about 17.5 percent for the National Science Foundation, including an increase of about 18 percent for grants to individuals; an increase of about 6 percent for NIH; an increase of 71 percent in the Department of Agriculture Competitive Research Program; a cut of 10 percent in basic research spending at the Department of Defense and large increases for three federal efforts that cut across research agencies -- global change research, science and mathematics education, and a program to prepare the way for the next generation of supercomputing systems.

While the President's budget is encouraging, it has been received with mixed emotions from the higher education community. Concerns have been voiced that much of the Administration's 17.5 percent increase in the NSF budget is targeted to the superconducting supercollider. To many, this proposal overlooks small science and allocates too much towards costly large-scale developments.

Furthermore, the NSF is funded out of an appropriation that shares jurisdiction with veterans in housing programs in the Congress. Many higher education officials fear that the large increase for such big projects will face tough competition with the needs of veterans associated, for instance, with Operation Desert Storm.

I must say that so many who voted against Desert Storm are looking for ways to look good back home that there is an incredible desire to pass anything that comes along, regardless of cost and regardless of how it fits into national priorities. We are really having a problem watching that aspect of the budget.

Another argument, particularly of interest to me, is the fact that no money was allocated for research facilities. On one hand, the Administration proposed a $25 million program to renovate facilities for agricultural research but nothing for others. The President called for a new $50 million program at the National Science Foundation to help colleges develop and acquire state-of-the-art research equipment. Well, that is fine, but I know, and I think you do, that those that already have the facilities will get the money for that equipment. It doesn't mean that those who need the facilities, and so many of our institutions do in this country, will get it. We will have the haves getting a lot and the have nots getting nothing.

On the other hand, the Administration proposed no money whatsoever for the NSF's two-year old program, the one that I helped get through, for renovating academic research facilities. We got an appropriation of $20 million for the first time last year and Barbara Mikulski was very, very helpful in that regard, but we have a $4 billion need out there. Twenty million, you can't kick it, but it is a far cry from what is needed to get basic research in universities and colleges that do not have the advantages of M.I.T. We all know that 50 percent of our college graduates that go into graduate work in this area come from institutions other than those that are so gifted at present.

Moreover, in its official budget documents, the Administration appeared to argue that universities' need for improved academic research facilities was not the federal government's problem. That is somebody else's problem. I don't know who. "Special programs for facilities repair and renovation are not warranted because the federal government directly supports only a small proportion," less than 10 percent of this activity, which is totally ignoring the problem.

As Patricia Warren, the director of Higher Education Curriculum on Science Facilities, stated, "it is like saying we haven't been doing what we should be doing; therefore, we don't need to do it." However, it doesn't require a great deal of skill to see the worsening condition of science education in the country.

I can't tell you off the top of my head how many students are studying science nor

the number of teachers teaching science. I can tell you that America is having difficulty remaining competitive in a world of increased technology and our ability to fill highly skilled technical jobs has declined rapidly. It doesn't take much studying to determine that situation. In most instances, it is right on the front pages of the newspapers. To continue to remain competitive, we must be able to train our future scientists. How do we train our young people if they do not have the facilities to train in?

For this reason, during the 99th Congress, I initiated the Academic Research Facilities Modernization Act; that is minimally funded now. This establishes a program to award grants to universities and colleges and independent nonprofit research institutions for repair, renovation, and in exceptional cases, replacement of obsolete science facilities.

The tragic state of our university science facilities attests to the growing need for funds to rebuild our nation's basic science infrastructure. A survey of private colleges and universities shows that only 10 percent of these institutions rated their science facilities as state of the art, while more than 40 percent of the institutions rated their facilities as inadequate to meet the current teaching needs. The problem is particularly acute in the small colleges that do not have large outside funding sources. It is precisely these colleges that are producing the greatest number of future Ph.D. candidates in science. It is imperative, therefore, that our undergraduate science facilities be as up-to-date as possible to educate and train tomorrow's scientists and engineers.

This program is crucial not only to our universities and colleges but to the competitive nature of our nation as a whole. Last year, the President's budget included money for facilities renovation and upgrade; this year, the President proposed zero. This is a travesty. Clearly, an increase of interest in math and science will get us nowhere without the facilities and the equipment to do it.

It is the overall picture that we must continue to focus upon. Not only is this country in dire need of math and science teachers, graduates, and researchers, we are also in need of improved facilities and equipment.

We are moving into the higher education reauthorization and I want to focus on the fact that we cannot allow ourselves to be driven by the budget deficit to lose sight of what we need to do. I am very pleased that we finally have higher education looking towards the future and the next generation.

Peter Smith, who is here, is the executive director of the National Commission on Financing Postsecondary Education; it will be meeting tomorrow and I will be speaking. To me it is incredibly important that we look to the future and see what we can do and what must be done to make sure that the young people of the next generation are placed in a position where they can get the higher education they need as well as the skill training. We have to take a look at those in two different directions. The way we are going now, there is no way that we are going to be able to afford as a nation and as a family the kind of access that we need to higher education.

I am hopeful that we can get out of it. In the short run, we also cannot get bogged down in the technical aspects of the programs. We must look to the future and, hopefully, we can mold whatever we do to lead us in that direction. We must reverse the trend of all loans and no grants and get this more in line, at the same time making it possible for families to save as they help their young people.

We also must realize that we do have problems with our funding at the present. We must try to delineate better the differences between skill training, higher education, and all, and the financing for that. We must try to ensure that we do not in any way seriously hamper the present methodology for giving young people a chance to access the higher education of their choice.

I want to go back to the beginning. If we are going to maintain our economic superiority, we cannot let higher education be driven into a lower priority to the deficit. We have to fight to ensure that it maintains its present status and has a growing priority. Our economic and national survival depends upon that, not only in terms of economics but in terms of politics and philosophy. We must have the economic strength to demonstrate to the world that the democratic form of government is the key to success, to ensure that the haves and have nots reach some sort of a parity.

My own philosophy is the best defense is a good offense. I intend to come forward and say the heck with the deficit, the heck with the problems of balancing the budget; let what has to be done be done to place us in a position where we can continue to be the leader in the world, not only in the military sense, but in the economic and the political philosophy sense.

I would be happy to answer any questions you might have and would be pleased to hear from you.

Questions and Answers

FREDERICK FORD: Fred Ford, Purdue University.

I am interested in how we can help you do that. The speech you gave, all of us could have written a similar script. You touched on all the things that we worry about, yet in our discussion this morning and in other discussions we have seen that Congress feels we are not managing higher education well. Much of the legislation lately has been restrictive and controlling.

I wonder if you could give us a few tips as to things we could do better to improve our relations with Congress.

SENATOR JEFFORDS: First of all, we have to get the facts out. The facts make things look terrible if you don't understand what they are. Congress will look at the total amount that we are having to pay in defaults and say what a horrible thing. That is 45 percent of our budget. Well, that makes it seem like 45 percent of people are defaulting on their loans. That is the public perception.

If you examine the facts, you find that we are doing no worse than well-managed banks and we are doing an awful lot better than Visa -- well, of course, that wouldn't mean much.

[Laughter.]

It is an oxymoron, I realize. But we are doing probably two or three times better than Visa and Master Charge. Those are the kinds of things we have to get out because there is that misunderstanding.

But when you have billions and billions, hundreds of billions of dollars floating around, you are going to have some defaults. So we have a misunderstanding and a misconception of how serious the problem is.

Secondly, we have to come forward with constructive programs on how to control those problem areas we have, mostly in the proprietary school areas. We have made some good inroads on that in the past. We can't fail to make those kind of changes. But at the same we have to recognize and make people recognize that the future of the country depends upon access to education.

For instance, the first hearing we had, had CEOs pleading with us. That is a change in attitude over the last couple of years. In fact, the first group that met me when I became a Senator were CEOs and I didn't know what they were coming in for. I thought they probably wanted lower taxes and they said we have to improve the funding for Head Start. It amazed me and it took me a while to recover.

But they were serious. So there is that understanding that we need to improve education and higher education; we have to go on the offensive. We can't be defensive on the facts. We have to get the real facts out and we have to remind

everybody to get their eyes oriented in the right direction. Whether or not we can be successful to any great extent . . . probably not, with all these constrictions we have in the budget right now, but hopefully in the future, if we don't stop reminding everyone, we can see improvements. At least we can reduce the damage.

MARY JO MAYDEW: Mary Jo Maydew from Mount Holyoke College.

Senator, one of the aspects of the reauthorization discussions that have many of us, especially those of us from selective schools, nervous is the idea of withholding federally based financial aid to a lower tier of the student body at any particular institution.

Would you like to comment on what some of those discussions have been and what your perspective is on them?

SENATOR JEFFORDS: Well, we are just beginning to have discussions. As you get the budget crunch, there is a move to say, "if we have to take care of anyone, we have to take care of the economically disadvantaged and the others are going to have to fend for themselves." That is a very dangerous attitude.

We have had some real changes in the legal status of young people now, which have not been dealt with. At 18, your parents are no longer financially responsible for you. We have tried to grab a hold of the all-American families, I call them, the ones that always used to support their families, and we tried to drag them along as long as we can. How long that is going to occur, I don't know. I haven't seen the recent statistics on independent students.

But it doesn't take anybody too long to figure out with a little mathematics that it is a lot easier to kick Johnny or Jane out, finance them under the table, and take advantage of the program by considering them economically disadvantaged. We have to figure out how to deal with that.

The only way we can deal with it is across-the-board access through a grants-type program. We have to recognize that as we go to the future, if we are going to have that kind of access and be able to afford it, we have to increase our grant program across the board because there is no legal liability now and people take advantage of the system.

MS. MAYDEW: Thank you.

May I ask a follow-up question, please?

One of the new conversations that has been part of the reauthorization discussions is expanding on what I would call the satisfactory academic progress regulations that are in place now and establishing a group -- the lowest 10 percent of the class -- as being somehow ineligible for future financial aid as a way to encourage performance

as a component of aid. That has a lot of us concerned and I would be interested in your reaction to this.

SENATOR JEFFORDS: Well, it has me concerned because you can't say that we must help the economically disadvantaged and recognize that many of them are educationally disadvantaged. If they do make it, struggling as they have to, then we are going to weed them out. That seems to me to be very much of a conflict in policy.

Secondly, how do you measure one institution against another? It becomes incredibly difficult to establish a national level within each institution. I am sure that Harvard would say that their lowest 10 percent is probably capable of getting a higher education somewhere and shouldn't be eliminated. So, I don't know how you do that. It is a bad policy.

There is no question that we have to look upon the institutions to ensure that they are not taking advantage of the situation by having students in there who really are there only to provide financial aid. Those kinds of things have to be dealt with, but I don't think you can do it with that kind of an arbitrary policy.

DAVID A. LIEBERMAN: Dave Lieberman from the University of Miami.

The federal government contracts with universities for research. One of the boring topics is indirect cost recovery. It used to be anyway. I don't know whether it will remain that way or not.

SENATOR JEFFORDS: It is not boring any longer.

MR. LIEBERMAN: Yes. Would you share with us your thoughts on higher education and indirect cost recovery issues and what the outlook for it might be?

SENATOR JEFFORDS: No.

[Laughter.]

I hate to be that brief but I really can't. I can't give you anything erudite or otherwise. In my mind, the best thing to do in such a case is not to say anything, but I appreciate your question. I understand what you are saying, but I don't have an answer.

Well, thank you very much. It is a pleasure being with you. I deeply appreciate all you are doing to try and make this country a better place and I thank you for it.

Productivity

Introduction

Frederick A. Rogers
Cornell University

We are going to spend the rest of the afternoon speaking about productivity and managing the costs and issues that we talked about last night and this morning.

Caspa set the right tone for this whole meeting when he said that there were strong winds of change in higher education. Surely, everyone here does not feel that the next 10 years will be like—in financial ways—the last 10 years.

I know many of us were struck by Mike Walsh's comments about the impact of leadership on institutions and what can happen with leadership and vision and what will not happen, in spite of our efforts without leadership. In some ways that second part of his message was more powerful than the first, when he spoke of things that from his experience both at the railroad and at Stanford didn't happen in spite of knowing what to do.

That is the heart of the issues that we are going to speak about this afternoon. It is well enough to know what to do. It is fundamental in the end to be able to do it and how to do it. But before we get to that, there is a major question of knowing what to do.

NACUBO has been involved in cost reduction for a number of years. Someone mentioned that this morning as a laudatory effort. Yet, we come to the end of the 1980s with the sense, at least in many parts, that we are not well managed, that our costs are not well-constrained. You ask how can that be if we have spent so much time trying to constrain them.

One of the issues that NACUBO is actively engaged in is the Financial Management Center, which has a long-standing record. So this isn't anything we have invented lately, but an ongoing issue. We must try to define for our membership and for institutions of higher education what it means to be well-managed. What is it that we are doing when we are doing our jobs well? Is it just minimizing campus conflict or is it more than that? I think we all believe there is more than that.

NACUBO is very committed to trying to work out this issue of what it means to be well-managed, what we as a group can do to bring the best of these management practices to our campuses. We are also trying to look at issues of structure, issues of process, what we can do about institutional and state financing structures that will incorporate the learning and research that has been done on incentives, management, and organizational development.

I am constantly struck by the differences between what goes on in the research world, what we talk about at meetings like this, and the practice that goes on in many states and on many campuses where people are doing things for reasons that have to

do with history and relationships. We all know they are not the best practices. Incentives lead people to put into practice the best that they know. That seems to be a part of our challenge and a part of the issue we need to think about this afternoon.

Lastly, one of the issues on the Cornell campus and on many campuses where I have spoken with people, is the feeling that, yes, we need to do something, but do we really need to do a lot? That could be painful. That could require us to change a lot of things and, in fact, we have been here for 100 or 200 or 50 years, and we have been, as was said this morning, fairly successful. In fact, it is, all things considered, fairly comfortable to be as successful as many of us feel to be.

The last issue before us is the process by which we develop campus-based consensus for the need to change and for the directions in which we can change that will be most constructive.

That leads us back to a beginning question of what we are all about and are we moving toward that. With that introduction, we will have Bill Massy talk to us about the experiences of seeking to contain costs and enhance productivity at Stanford. Then we will talk about the same processes in the public arena.

Bill, I hardly feel the need to introduce you to this group. People do have your biography and you have been around this process for long enough that I think everyone here knows Bill Massy. Let me say one or two things that some of you have not caught.

Bill is the director of the Stanford Institute for Pew Higher Education Research and he is continuing as the chief financial officer of Stanford, although I hear different things from him as to how long that will go on. He also continues as a professor of education and business administration at Stanford University and is now heading the newly formed Higher Education Program in Administration and Policy Analysis at the Stanford School of Education. Bill is the author or coauthor of seven books and 50 articles. Many of you have read them, as I have, over the years and profited from those insights.

We are looking forward very much, Bill, to hearing from you today.

Causes and Cures of Cost Escalation in College and University Administrative and Support Services

William F. Massy
Stanford University

Timothy R. Warner
Stanford University

WILLIAM MASSY: Thank you, Fred. It is a pleasure to be here. It is a great pleasure to follow in Mike Walsh's footsteps and continue, I hope, in the theme that he began last night. This is certainly a more pleasant subject than the one Dick Anderson asked me to speak about this morning. I am glad we got that out of the way.

I want to talk about the causes and cures of cost escalation in administration and support services at Stanford. That is another way of talking about productivity. One of the things we learned from Mike last night is that productivity in higher education, whatever else it may or may not be, is not an oxymoron.

Management of change is where it is at and productivity is one of those areas where change is necessary in the view of many, and in my view, I might add. I am reminded of the story of the university president who was appointed and when she came on board, her predecessor gave her three envelopes and said, "Now, put these in your safe in your office and when things get tough, you open them and you will notice they are numbered, 1, 2, 3. Be sure and open them in the right chronological order."

So she did and the first crisis came along in due course and it was a tough one and she pulled out the envelope. It said, "Blame it on your predecessor." So she did and the storm passed. The academic sea had calmed and the board went forward and some time later the second crisis came along and it was even worse than the first. So she remembered the second envelope and took a look. And it said—it was good advice—it said, "Blame it on the government." And she did and the storm passed and things went on.

Finally, the third crisis arrived and this was now well into her presidency, but the

third crisis arrived and it was even worse, of course. In desperation as she was heading off to the board meeting, she remembered that envelope. She stuck it in her purse and went off and just when the going was really tough she remembered and she looked down and she opened it and the members of the board were rather puzzled because she just got up and left the room. That was the last they saw of her.

All that was left was this scrap of paper on the floor that said, "Prepare three envelopes."

[Laughter.]

The problem nowadays is that the first two envelopes don't work. That is what accountability is all about. What we are being asked to do is to shape our institutions, not to find people or things to explain our failure to shape them. That is what Mike's message was about last night. I can tell you that with Mike as a trustee, you don't get very far in trying to blame it on your predecessor or blame it on the government.

He has been there. He knows. There are more and more trustees like Mike, trustees who believe that they have a strong stake in helping the institution get it right, not to manage it but to goad the administration into doing the right thing and holding it accountable. As we said in a recent issue of *Policy Perspectives*, the Pew Higher Education Research Program publication, it is very simple how you balance a budget. In the end the board just tells you to do it.

That is what happened. Mike was chairing a committee, and in a quiet conversation said please balance the budget and, by implication, if you don't, I will. That is okay. We will find somebody who can. It is very, very simple. That is accountability.

I want to talk with you about the problems in the administrative and support services side and I want to concentrate on A&S (administration and support), not because I think the academic side is unimportant. In fact, to answer a question that was asked of Mike last night, we have not yet addressed the academic side at Stanford. We are going to in fairly short order. I am addressing the administrative and support side here because that is what I was asked to do and I believe in accountability and I do what I am told.

After these remarks, Dr. Massy presented his paper, the full text of which follows.

Between 1980 and 1988, the median price of an undergraduate education at the U.S.'s most prestigious private colleges and universities rose more than five points above the Consumer Price Index. At public universities it rose only one point less, and for no segment of the four-year higher education sector was the rise less than 3.5 percent above inflation.[1] In contrast, most families' inflation-adjusted income growth hardly exceeded 1 percent per year for this same period. The conclusion is inescapable: students are paying more for college, both in absolute terms and relative to their families' ability to pay.

Just as students faced dramatic increases in the price of a college education in the last decade, institutions were incurring large increases in their costs per student as

well. Between 1976 and 1986, for example, the annual real cost growth rate for public institutions was 2.5 percent and for private institutions 3 percent, while the higher education price index (HEPI), a "market basket" of college costs similar in nature to the consumer price index, grew by only about 0.7 percent per year.[2] While statistical studies that span only a few years are notoriously sensitive to the beginning and ending points, the years between 1976 and 1986 include instances of both the lags in real costs associated with rapidly escalating inflation, and the corresponding overshoots as inflation declined precipitously.

The pattern of real growth in cost per student can be seen for all kinds of institutions. In the private sector, the typical lower-priced college enjoyed about 2.5 percent real annual growth in expenditures per FTE student between 1975 and 1986.[3] The figure for moderately priced colleges was 3 percent; for higher-prices colleges, 3.5 percent; and for research universities, 3 percent. Growth was slightly lower in the public sector, but still substantial. Expenditures per FTE student at the typical public research university grew at about 2 percent per year; and for land grant institutions and public colleges the figure was about 2.5 percent.

Administrative and support (A&S) activities contribute significantly to the overall rate of cost rise. For example, when *The Chronicle of Higher Education* used a decade of recent Equal Employment Opportunity Commission data to compare increases in professional staff with increases in faculty, she found the staff grew faster than the faculty by a factor of ten to one.[4] An internal study at Stanford University demonstrated that, for roughly the same time period, the average growth rate of A&S organizations exceeded that of academic organizations by a factor of almost six. Data collected by the Williams Project on the Economics of Higher Education show that the share of expenses attributable to A&S operations in all colleges and universities grew from 41.1 percent in 1979 to 42.2 percent in 1986, a difference of about 1.1 percentage points. The differences were larger for private institutions than for public ones.

HEGIS/IPEDS data for 1975-86 indicate that administrative costs tended to increase faster than academic costs in all higher education sectors.[5] Real A&S expenditures grew fastest in the higher-priced private colleges, for which the median was 4.5 percent per year, although the figure for the medium and higher-priced public colleges was not far behind at 4 percent. The difference between A&S and academic expenditures is substantial for the private colleges, where the medians differ by as much as 3 points; somewhat less so for the public and private research universities, where the difference is about 0.5 points; and rather small for the public colleges and comprehensive universities, where the difference is less than 0.25 points. Further, the data show that despite the growth in A&S, real instructional expenditures increased by more than 2 percent per year in every sector except the lower-priced private colleges. (In the private higher-priced colleges, the research universities, and the land grant schools academic expenditure growth exceeded 3 percent per year.) Therefore, the data suggest that while A&S growth represents an opportunity loss to academic programs, instruction was truly disadvantaged only in the lower-priced and moderately priced private colleges.[6]

Explanations for Cost Rise

Why have A&S costs soared in recent years? Most people point to regulation and micromanagement and the so-called "cost disease." These conditions are externally imposed, but they do not exhaust the list of possible causes. In fact, the most powerful drivers are endemic to the institution itself. The endemic causes fall under the rubric of the "administrative lattice" and the "academic ratchet," the latter being the subject of this paper.

The Cost Disease

The cost-disease model, first developed by William Baumol and Sue Anne Batey Blackman,[7] explains the unbalanced growth observed in different sectors of the economy. The model predicts that certain "economically stagnant" services have great difficulty achieving productivity growth.[8] These services are highly labor-intensive, and therefore over time they suffer at the expense of other "economically progressive" services—those able to make rapid strides in productivity through technological leveraging. "Cost disease" describes the phenomenon resulting when certain highly labor-intensive organizations such as colleges and universities try to stay competitive in the general labor marketplace while not reducing quality and while being constrained in attempts to improve productivity. Traditional methods of productivity gain (e.g., substitution of capital for labor), which work to offset rising market wages, are often not available to these organizations.

The cost disease model predicts that the real prices of a stagnant service's output will rise at about the same rate as the shortfall in its productivity growth. Teaching provides the quintessential example. If one assumes that the student-faculty ratio does not increase over time, it follows that real teaching costs will rise by an amount approaching the economy-wide productivity improvement rate. Not all college and university activities fall into the "quintessentially stagnant" category, however. Libraries can incorporate advances in technology and boost productivity, for example. Accounting transactions are processed with computers, and the price of computation is coming down. Operations and maintenance functions can take advantage of new materials and methods. One would expect that some of these activities might actually be economically progressive—that they might be able to garner productivity gains—rather than economically stagnant. Yet, the evidence we cited earlier suggests that the costs of A&S activities are rising faster than those for academic operations.

Regulation and Micromanagement

Academic institutions complain they are being overwhelmed by proliferating regulation and micromanagement that push real costs up. College and university staffs swim in a sea of acronyms—EEOC, OSHA, A21, EPA, FASB, GASB, IPEDS, OFCC—all placing demands on their time and energy. Each new regulatory program requires the institution either to hire more workers or to dilute the quality of its output by overloading existing staffs with additional demands. What too often

happens is a leverage effect that requires, for example, that for every new employee a state might hire to monitor institutional compliance, a single campus must hire three or four people of its own—to gather data and provide analysis as well as to try to predict and mitigate further regulatory and budget-limiting initiatives. In a multicampus state system, the overall ratio can quickly jump to 15 or 20 to 1, so the "transaction costs" of regulation and micromanagement can be very substantial.

Colleges and universities (as well as other nonprofits) are losing many of the special privileges they held with the federal government. Increasingly, they are being treated like for-profit entities and having to deal with the extra paperwork and expense this entails. When private higher education's exemption from the National Labor Relations Act was repealed, for example, this one change required substantial increments to employee relations and legal staffing, and in some cases major time commitments by senior institutional officers. Two decades ago, the idea that colleges and universities might be prosecuted for antitrust violations was remote. Now, millions of dollars are being spent by colleges and universities across the nation as the Department of Justice begins to investigate alleged price fixing in tuition setting and financial aid. Whole new bureaucracies may well spring up within institutions to guard against future vulnerabilities. Doubtless the same thing will happen as Congress and the regulatory agencies focus on cost allowability in overhead charges on government-sponsored research.

All who have helped to manage colleges and universities during the past several decades can describe costs imposed by regulations and micromanagement, but documenting these costs in the aggregate is a different story. We could find no literature on the subject; for instance, the 1040-item SIHER *Productivity in Higher Education Bibliography* contains no references to empirical studies of the effects of regulation and micromanagement on A&S costs.

No function-level databases are available for tracking legal, health and safety, personnel, and similar expenditures across institutions and over time, and this seriously limits research. Establishing such databases should become a priority for NACUBO, the Higher Education Data Sharing consortium (HEDS), or the government. (While the definitional problems would be formidable, the informal sharing that exists already suggests they would be surmountable.) If such a database had existed during the period when higher education was being brought into the mainstream of regulation, researchers could have correlated surges in expenditures to the timing of regulatory actions. It might still be possible to do a retrospective study of particular areas where regulation has grown substantially—for example, by asking institutions to search their records for the number of full-time equivalent (FTE) student certain job classifications. Prospective studies would of course be possible if an appropriate database could be established now.

The Administrative Lattice

The administrative lattice: A term to describe the proliferation and entrenchment of administrative staff at U.S. colleges and universities over the past two decades. The term

connotes not just the fact of this increase in staff—estimated at 60 percent nationwide between 1975 and 1985—but its effects on the institution's operations and costs. These include the transfer of tasks formerly accorded to faculty; the growth of "consensus management," which effectively diffuses risk and responsibility for decisions; and the increase of costs and decline of efficiency as administrative bureaucracy extends and solidifies its ties within an institution.[9]

While retrospective studies linking regulation and micromanagement to cost rise would be useful, they would probably overestimate the true cost of these external drivers. By "true cost" we mean the expense incurred as the result of necessary actions, the most efficient responses to the regulators and micromanagers. Unfortunately, the internal forces associated with the administrative lattice, defined above, drive up costs in tandem with the external forces.[10] The lattice "endlessly extend[s] itself in response to an environment of regulation and micromanagement, of administration becoming a goal in itself, and of a commitment to consensus management that too often made higher education risk-averse,"[11] and it grows faster when external forces like administration and micro-management push the organization in new directions. The resulting interaction effect makes it hard to separate the necessary cost of responding to the external drivers from the internally generated—hence controllable—costs associated with the administrative lattice.

Administration becomes a goal in itself when adding new staff leads to a self-fulfilling requirement for yet more staff, a process that has been dubbed "supply creates its own demand."[12] An urgent task requires new problem-solving capacity or expertise. Once the new person has solved that problem, he or she looks around for other problems requiring similar expertise. There always is a long list of pressing administrative issues and potentially useful support services, so the quest often is successful. Soon the new person is over-burdened, and the cycle repeats itself. Furthermore, the sheer growth of administrative staff drives the need for further growth, since each new person adds to the network of consultations and debates needed to achieve change. The number of pair-wise interactions in a network increases geometrically with the size of the network, so administrators find their days filled with meetings and phone calls, sometimes (perhaps, happily) at the expense of creative action.

Consensus management springs from managers' efforts to achieve "buy-in" on important decisions from their peers, superiors, and subordinates. This is a laudable goal, and it is consistent with the prescriptions of most management writers.[13] However, taken to an extreme it encourages risk aversion, erodes accountability, and paralyzes action. In higher education, especially, decision-making group processes tend to value careful analysis and thorough debate, which makes decisive action difficult. No one is accountable when everyone is responsible, so adverse consequences are too often accepted as inevitable rather than the result of assignable—and correctable—causes. This is particularly true when the consequences stem partly from inaction. College and university managers often accept "we were working on it" as a palliative, whereas in business, results are what usually count.

Off-loading administrative and support services from faculty also drives the administrative lattice. Faculty once were responsible for student advising and

counseling, for example, but now these functions are largely handled by staff. The standards for administrative, clerical, and facilities support have risen in many institutions. Such shifts substitute lower cost for higher cost labor, and thus increase overall institutional productivity, but their fruits usually are taken out as quality improvements rather than cost reductions. Moreover, most institutions define quality improvement as more faculty research, publication, and professional service—not as improved teaching and more relevant curricula.[14] The resulting "academic ratchet" thus joins the administrative lattice as a prime cause of college and university cost escalation.[15]

Diagnosing the Lattice Effect

What does an institutional leader look for if he or she suspects the lattice effect is driving up costs? The traditional ways of diagnosing organizational malaise don't work, because the lattice effect may co-exist with hard work and high effectiveness in performing the tasks at hand. The organization's choice of tasks is at issue, not whether work is being performed diligently. The critical choices often are made at low levels in the organization, and thus are not visible to senior managers. Unfortunately, the workers making the choices usually lack the perspective to diagnose the lattice effect—which is, after all, the consequence of their own good-faith efforts to improve institutional performance. The disconnection between visibility and perspective makes diagnosing the lattice effect extraordinarily difficult, and the understandable efforts by operating managers and workers to defend their actions further obscure the diagnosis. Nevertheless, institutional leaders can look for tell-tale signs of the lattice effect at work.

Growth of A&S Versus Academic Expenditures

Expenditure growth greater than the school's average or expenditure ratios in excess of interinstitutional norms should trigger an analysis of circumstances and causes. The analysis should extend to the level of individual offices and functions, since this is the level where the needed visibility can be obtained. The reviews should be performed by teams that include senior administrators, people from the involved departments, and people from other operating departments, since the objective is to merge the visibility and perspective needed for diagnosing the lattice effect and to prepare the ground for achieving buy-in on mitigations. Management should provide the teams with analytical support for data gathering and model building—e.g., for isolating the effects of transaction volume increases on costs and determining the efficacy of productivity-enhancing initiatives.[16]

The review teams should be alert to excessive administrative entrepreneurship, which motivates managers to add services that, though desired by their recipients, may not be cost-effective from an institution-wide perspective. Some of the recent trends in off-loading faculty effort to support staff fall into this category. So do efforts by technologists to "market" the latest information services for their own sake—on the basis of vague promises rather than hard-headed business plans. Reviewers should

suspect excessive administrative entrepreneurship when the following two indicators occur together:

- the providing organizations go out of their way to market their wares to users or central administrators, and
- the services are provided to users free of charge or substantially below cost.

The first condition demonstrates that the observed expenditure growth rate comes about more by internal initiative than external necessity, while the second shows that users' decisions do not take the full cost of providing the services into account.

Excess quality—sometimes called "function lust"—is a close cousin to administrative entrepreneurship. While maximum feasible quality is to be desired in teaching and research, the quality of A&S functions should be scaled to the institution's need. One should not write lengthy reports when bullet-point outlines will do, for example. A school should not necessarily seek the "best accounting system in the country," although it may well choose to have the best library in its peer group. The key is to decide how much quality to design into each A&S system, and then implement that decision with high performance. Staff should understand this difference between design quality and performance quality, and assume the obligations to match the former with need and to maximize the latter to the best of their ability. The review teams should query managers about their understanding of the difference between design and performance quality, and assess how they are translating their understanding into practice.

The review teams also should look for excessive function replication, which occurs when managers try to mitigate risk by adding layers of checks and balances instead of developing clear criteria and appropriate accountability mechanisms. For example, many institutions have addressed internal control problems by hiring more accountants to check transactions instead of identifying and fixing the root causes—which usually are lack of motivation, training, and accountability at the departmental level. Review teams should search out function replication by studying the whole range of tasks needed to achieve A&S outcomes. Consider the following example: the sequence of tasks needed to achieve the outcome of "buying something." The purchase transaction may be:

- initiated by an operating department;
- referred up the line management chain for approval at several levels;
- reviewed by a central finance staff for funds availability and, if the charge is to a restricted fund, whether this kind of transaction is allowable under the terms laid down by the donor or sponsor;
- transferred to the central procurement department for negotiation with a vendor and, eventually, order placement (often this step requires multiple contacts with the initiating department to resolve issues relating to the product or service specification);
- returned to the initiating department to verify that the goods have been

received; and

- referred to the central accounts payable department to write a check to the vendor.

While each step can be justified, the process as a whole may represent "overkill," especially for small or routine transactions. For example, in the case of small transactions the initiating department and a single approval level might be held accountable for fund availability and allowability. For uncomplicated purchases at posted prices the buying action may be delegated to the initiator, thus bypassing the procurement department.[17]

A&S Service Shortfalls

Function replication not only adds to A&S cost, it actually can reduce the effectiveness of other institutional activities. Therefore, the search for lattice effects should focus on the symptoms of A&S service shortfalls as well as cost rise.

The most common complaint by operating units about A&S "service" is that it disempowers people, thus undermining local initiative and judgment. Sometimes this is the inevitable consequence of required internal controls, but often it stems from function replication and over-zealous central staff initiatives. The tension between A&S service providers and the faculty and staff in direct teaching and research functions is summed up in this excerpt from *Policy Perspectives*:

> Sometimes the tension is genuinely creative, as each half of the institution strives to strengthen itself while recognizing the inherent value of the other. More often, that tension yields an unproductive competition for resources. The faculty remind themselves and the community that they are "the business" of the institution, all other activities being non-essential and frequently wasteful. For their part, the staff gleefully recount tales of faculty mismanagement and waste, secure in their knowledge that the only thing business-like about the institution is their own ability to discharge increasingly complex managerial tasks.[18]

The "we-they" attitude between the two institutional cultures is unfortunate for many reasons, among which is its tendency to obscure important signals about the administrative lattice effect. Institutional leaders should be alert to the following four signals.

CENTRALIZATION AND THE CREATION OF "SUPER-STAFFS," which arise because A&S organizations try to take over more functions to compensate for perceived shortfalls in academic operating unit performance.

POLICIES THAT REQUIRE PRIOR APPROVAL OF ACTIONS, RATHER THAN POSTACTION ACCOUNTABILITY, which arise because senior managers and A&S unit leaders find it easier and safer to exercise their own judgment than to maintain an effective accountability system.

DECREASES IN THE TIMELINESS OF DECISIONS, which arise because prior approval takes time, especially when the central staff is overloaded and not accountable for the

consequences of delays.

INCREASES IN ERROR RATES AND THE NEED FOR RECYCLING DECISIONS AND REWORKING TRANSACTIONS, which arise from efforts to circumvent prior approval requirements and because local initiative, judgment, and accountability—thus the impetus to "get things right the first time"—is undermined by disempowerment.

The forces that produce these signals feed off each other. For example, efforts to deal with error rates may well swell the central staff and tighten the requirements for prior approval, which will degrade timeliness and undermine local empowerment. The net result is higher cost and reduced effectiveness.

Breaking the Lattice: the Stanford Experience

Experience provides the best guide for operating managers as they confront the complex and controversial task of breaking the administrative lattice. Stanford was one of the first institutions to confront the lattice effect head-on by self-consciously rethinking the nature of A&S work, and then repositioning itself for the revenue diet of the 1990s by significantly reducing A&S expenditures. These authors were participant-observers in the process. The following narrative account illuminates many of the principles discussed earlier, and in places suggests how thinking evolved to the point where the principles could be elucidated.[19]

The context for the Stanford experience rests in the decade of the 1980s, which was a boom period not only for Stanford but for virtually all private research universities. From 1980-88 Stanford recorded average annual compound real growth rates of:

- 6.7 percent in the operating budget;
- 5.6 percent in sponsored research; and
- 10 percent in gifts.

The Stanford staff grew by 28 percent during this period, while the faculty, in contrast, grew by just 5 percent.

Not surprisingly, this robust growth fed future expectations. In 1986, a $1.1 billion fund-raising campaign—the largest in higher education to that point—was launched to coincide with the university's centennial. In addition, an ambitious planning process was underway to renovate and expand many of the science and engineering facilities on the campus. As the Centennial Campaign moved into high gear there was great optimism for the institution's future.

But, as the decade of the 1980s drew to a close, there were growing signs that the boom period could not be sustained and that some of the high expectations could not be met. Stanford recorded modest unplanned deficits in 1987 and 1988. Then in April 1989, the first planned deficit in over 15 years was reluctantly approved by the Board of Trustees for the 1989-90 fiscal year. In developing its budget for 1989-90 the university faced not only the effects of slowing research volume but sharp increases in the cost of benefits and health and safety expenses. Together, these factors made it

difficult to keep up with the planned commitments in new programs and facilities.

Just as troubling as the budget picture itself was an increased sense of frustration on the part of many faculty and staff with the university's decision-making processes and the effectiveness of the support services. Of principal concern was a growing reliance on consensus decision making throughout the university. While consensus decision making is the standard mode of operation in academic departments, it was, quite inappropriately, becoming the norm in administrative units. Because consensus building takes time and typically requires extra staff to perform analysis and negotiate issues, the decision-making process is slowed and considerable additional expense incurred. Moreover, accountability is reduced as it becomes less clear who is responsible for what may turn out to be a bad decision. There was good evidence that this was happening throughout Stanford's administrative ranks.

Concern was also growing that central services—finance, operations and maintenance, and human resources, in particular—lacked effectiveness and posed significant bureaucratic impediments to getting the university's business accomplished. For example, building repair and improvement jobs performed by university staff were often viewed as uncompetitive with the outside market. Rather routine internal processes, such as payroll changes and reclassifications, required approval by as many as eight layers of staff and management.

Faculty conducting sponsored research were the harshest critics of the situation. From their perspective, a lumbering bureaucracy did more than just frustrate their efforts to get work done. The added costs of that bureaucracy put pressure on the indirect cost rate, which had grown from 58 percent in 1978 to 74 percent in 1990. With one of the highest indirect cost rates in the country, many at Stanford began to speak about the risk of losing research competitiveness. The research faculty felt, not surprisingly, that they were getting a double whammy—modest-to-weak central services at an increasing cost.

In light of the 1989-90 budget deficit, the Board of Trustees established an informal committee to work with the administration to develop a strategy. One of the more influential members of that group was Michael H. Walsh, Chairman and Chief Executive Officer of Union Pacific Railroad. Walsh, who had considerable experience on the Stanford Board, had led Union Pacific through a major restructuring and downsizing during the previous three years. Feeling that the university could learn from the corporate experience, Walsh hosted a group of Stanford administrators at the railroad's Omaha headquarters in July 1989 in an intense two-day review of the changes at Union Pacific. Despite the obvious differences between a railroad and a university, the Stanford group came away with some important lessons and transferrable principles that would influence the approach taken in the subsequent budget reduction and restructuring efforts. They included recognition of the end of cost-plus pricing, action teams, "put the customer first," and communication.

Recognition of the End of Cost-Plus Pricing

To the surprise of some at Stanford, there were some important parallels observed

in the way external forces were influencing Union Pacific and Stanford. Deregulation of the railroad industry meant an end to cost-plus pricing. No longer could Union Pacific justify its cost increases by having them approved by a regulatory board and then passing them on to the customer. The railroad had to compete, and in the deregulated world the principal competition was with trucks. Perhaps the most important initial strategy employed to achieve that objective was cost reduction.

Although Stanford wasn't regulated, it had operated in essentially the same manner during much of the 1980s. As costs went up as a result of the addition of new programs and A&S functions, these increases were easily passed along to students in the form of higher tuition and to the government in the form of higher indirect cost rates. But there were signs that higher education's form of cost-plus pricing could no longer work. Public pressure to slow tuition increases was intensifying, while federal research funding was tightening. Both Union Pacific and Stanford, then, faced their own kind of price resistance. Like Union Pacific, Stanford would later conclude that cost reduction was a necessary strategy for addressing the situation. Furthermore, the Stanford group learned that binding resource constraints can provide the leverage needed for doing what it previously might have considered impossible.

Action Teams

Walsh had charged small groups at Union Pacific to take on problem areas that cut across organizational boundaries and to develop specific, practical, and measurable recommendations for change. He emphasized that these "action teams" were not study groups. Rather, an implementation strategy was critical to their success. As described below, the action team concept would have important applicability at Stanford. Walsh's bias, which also was reflected to some degree in the Stanford approach, was that major organizational change required strong and forceful action. "You can't hold back," he said. "Don't be afraid to 'push the needle over.' Relieve it if you've gone too far. Don't stop short."

Put the Customer First

Much of Walsh's focus at Union Pacific was on changing the culture of his organization from one that was hierarchical and internally focused to one that was less bureaucratic and more customer oriented. For Stanford, the concept of a customer orientation was somewhat foreign. Yet it was clear that a number of Stanford's internal service-providing organizations did not have a good sense of who their customers were. This concept became particularly useful later in the process when schools began to be looked upon as operating units in greater control of their service demands. Closely tied to the concept of customer orientation was the need to change the management culture. Emphasis on the expensive consensus decision-making processes needed to be replaced by more direct line authority and accountability.

Communication

One of the keys to Walsh's success was a strong communications strategy. Explaining to employees such fundamentals as the economics of the organization, why significant actions were being taken, and engaging them in the dialogue was critical to effecting lasting change. Although Walsh took on a good deal of this communications effort himself, it became an important management principle at all levels of the organization. To the Stanford group, it was clear that the development of such a communications strategy had not been a high priority in the past and would be a major challenge of any change effort.

Action Plans for Change

Stanford's first organized efforts started in the fall of 1989 with the creation of its Action Plans for Change (APC) program. APC's principal objective was to create lasting organizational change built around four operating principles:

- To simplify processes.
- To simplify organizations and structures.
- To create more effective client/supplier relationships.
- To change the management culture in support of the first three objectives.

The APC effort was guided by a steering committee of senior administrators and deans. It began its work by interviewing over 150 faculty members with the purpose of pinpointing the most significant problem areas in the institution. These interviews resulted in the establishment of several action teams of the type used so effectively at Union Pacific. Action teams were created in the following areas:

- the organization of student services;
- human resources organization structure and management;
- facilities planning;
- library organization; and
- the central administrative reporting structures.

The APC Steering Committee developed specific charges for each action team. Interestingly, none of the charges called for specific cost reduction targets. Exhibiting perhaps a naive hopefulness, the committee felt that cost reductions would emerge from the recommendations themselves, and that these reductions would be less disruptive to morale than reduction targets imposed from above. The lack of budget reduction targets were an example of the steering committee's desire to focus on structural and process change. But, as the process evolved and the financial problems intensified, that viewpoint changed and in a number of the action teams specific targets were established.

The action teams were typically comprised of seven to nine people, both from within and outside the areas under review. They were asked to consult widely but not to attempt to build consensus. They were to report their recommendations to one or two executive decision makers, individuals with the authority in the institution to implement change. We shall defer discussion of the action teams' results until later, because their efforts were significantly affected by two external events that struck in the fall of 1989, just a few weeks after they had begun their work.

The first event was the October 17 earthquake, which resulted in $140 million of damage to the campus.

The second event was a new set of financial realities emerging from changes in the forecast of Stanford's principal income sources. Revised projections showed additional shortfalls in government research. Unless the indirect cost rate could be increased to cover the shortfall in research volume, Stanford's projected income from that source (at 30 percent, the second largest, behind tuition) would shrink. Federal concerns and internal faculty pressures to constrain research overhead charges made a rate increase unlikely. Furthermore, Stanford was under considerable public pressure to restrain the growth rate of tuition, which had increased annually at about 4 percentage points over inflation during the decade of the 1980s.

In December 1989, Stanford officials prepared a forecast constraining the two principal income sources. Tuition growth was held at inflation plus 1 percent and the indirect cost rate was fixed at 78 percent (which still represented a four-point increase from the existing rate). The result was a forecast of substantial deficits for the 1991-93 period.

By January 1990, it was clear to the Stanford administration that the university's financial context had truly changed.

- Prices in the form of indirect cost rates and tuition could not continue to grow at the rates of the 1980s.
- Decision-making processes and support service levels needed to become more effective and less expensive to ensure continued competitiveness.
- In order to cope with reduced revenue growth and to have funds for future investment and renewal of the academic enterprise, budgets would have to be cut and mechanisms established to ensure that annual improvement in productivity become a standard operating principle.

The Repositioning Program

To address these conditions, Stanford Provost James Rosse announced in February 1990 a broad-based program called repositioning. Its purpose was "to put the university in a place where it can continue the leadership in academic innovation and program development that has characterized its record over recent decades." Repositioning had four specific objectives:

- To constrain growth in income sources, by holding student fee increases

close to inflation and indirect cost rates at or below 78 percent.

- To reduce operating budget expense by $22 million by taking 12 percent reductions out of the A&S areas (faculty positions, student aid, and library acquisitions were exempt from any reductions); the A&S areas represented a base of about $175 million.
- To expand the APC efforts for process and organizational reform, emphasizing the restructuring of A&S work and the reorganization of A&S offices, to avoid simply squeezing budgets through across-the-board cuts.
- To constrain the facilities construction program, to reduce pressure on indirect costs and permit the diversion of resources to earthquake repair.

It must be stressed at this point—as the university community was reminded throughout the effort—that repositioning was meant to be more than simply a budget-cutting exercise. Although budget reduction was essential, significant longer-term culture changes were required to ensure that the university simply did not fall back into its old habits once the current set of crises passed.

Consequently, throughout repositioning the focus was not just on achieving budget reductions but on true restructuring. This operating principle served to guide the formation and approach of a Repositioning Steering Committee (not to be confused with the APC Steering Committee) which, under the direction of the provost, would manage the effort. The committee was comprised of three senior faculty, including the chair of the Faculty Senate; key operating vice presidents; a trustee; an executive of a major local company; and four support staff at the director level.

The Repositioning Steering Committee established initial budget reduction targets and discussed them with schools and budget units. These targets, which ranged from 5-30 percent, were based on comparative analysis with other institutions, the growth rates of the unit, and the committee's judgment about the impact of a given reduction on a unit. While the analytic comparisons were certainly important, in many cases the Committee's judgment carried the day. Given the need to move the process along rapidly, there was simply not time for extensive analysis.

Once initial targets were set, the Repositioning Steering Committee divided itself into "liaison teams" to discuss the targets with each unit and to monitor progress throughout the entire effort. Preliminary plans were required from each unit within a two-week window to outline how the targets could be met. Once those initial plans had been developed, they were reviewed by the committee and final targets were set. Units then had two months in which to prepare final plans to meet their targets.

The general philosophy of the Repositioning Steering Committee was to let the units themselves determine the best ways to achieve their targets. Several common approaches emerged:

ELIMINATION OF TASKS, SERVICES, AND FUNCTIONS LESS NECESSARY IN A MORE CONSTRAINED ENVIRONMENT. For example, management and operational auditing (but not financial and compliance auditing) were reduced, closing the infirmary section of

the student health center, and eliminating what was essentially a redundant auxiliary accounting function.

ELIMINATION OF LAYERS OF STAFF OR MANAGEMENT. For example, an associate vice president's position was eliminated, as were some other upper-middle level positions.

CONSOLIDATION OF FUNCTION. For example, engineering functions spread across the university were merged, two library departments were consolidated, and some student service management and support functions were merged.

In addition, plans were made for reviewing service center (charge-out) operations to determine whether they were truly competitive with the outside market.

APC Results

While the planning activity was in process at the unit level, the work of the APC teams intensified. Cost-reduction targets were given to a number of the teams, an important step that, in retrospect, helped to focus their efforts. By June 1990 each of the APC teams had reported to its executive decision maker with what, in some cases, were dramatic recommendations for change.

The human resources team discovered that Stanford's human resources staff/employee ratio was almost double that of comparable organizations. The team believed that a 30 percent budget reduction could be managed within its broader recommendations for streamlining the HR functions and bringing them closer to line management.

The library team recommended merging the library organization with the university's Information Resources unit. This bold step recognized the potential for synergy with the computing and networking arm of the institution and should have significant payoff over the long term.

The student services team recommended a new vice presidency that would consolidate widely dispersed and often poorly coordinated staff functions, all charged with some aspect of student life. The recommendation also reduced the number of direct reports to the president and provost, which had been a concern for a number of years.

The facilities team concluded that Stanford's cumbersome and time-consuming facilities decision-making processes had cost as much as $4 million per building over the years. Their recommendations called for the establishment of a single university facilities officer to manage the planning process, streamlining activities that previously had been divided among a number of different areas. In addition, they recommended the university include elapsed time as a project constraint, just as program and budget are constraints.

The central administrative structure team recommended that the university reorganize its senior academic and administrative leadership. The reorganization plan was driven by several important principles.

- School leadership should be relied upon more heavily for policy guidance. This could be accomplished through the creation of a university cabinet comprised of the president, the provost, and the deans. The cabinet would take leadership for policies governing long-range planning, academic program development, facilities and fund-raising efforts, and faculty and student affairs.
- An operations council should be created, comprised of the key operating vice presidents. The council would scrutinize the relationship of support services to academic objectives.
- School administrative managers should be more closely connected to the A&S units, with the school administrative deans providing a direct connection to the suppliers of university services.

These changes should help to engage the academic leadership more actively in university-wide issues and create a culture for improving the quality of A&S services.

Stanford's APC and repositioning programs produced some immediate gains, with the potential for lasting longer-term change. The 1990-91 budget is projected to be in balance, and although new income shortfalls may force more restructuring in future years, Stanford is much better positioned for such efforts because of restructuring. Furthermore, the decision to limit tuition growth means that an entering freshman will pay about $1,000 less in his or her senior year. Although these initial outcomes are important, they will be easily overshadowed if Stanford is able to achieve long-term management culture changes. Some of these changes are underway now, as individual units go through the difficult process of restructuring, and where possible, redesigning work. This implementation phase is planned to end with the current fiscal year, on August 31, 1991. Morale is low in some A&S organizations, but administrators believe the ultimate results will be worth the price.

Conclusions

The massive shift of higher education into the mainstream of national regulatory policy, begun a quarter of a century ago, now has largely been accomplished. New challenges will assert themselves, and old ones will become more difficult, but these represent a continuing flow rather than a paradigm shift. Therefore, there is less justification for increases in the share of institutional expenditures devoted to A&S functions than when the paradigm shift was in progress. American business confronts the same challenges, but it has learned that continual increases in overhead relative to direct operating cost simply cannot be tolerated in today's competitive environment. It is time for higher education to learn the same lesson.

What if college and university leaders set a goal, individually and collectively through voluntary action, to hold the ratio of A&S expenditures to total educational, research, and general expenditures constant over time? Better yet, what if they decide to reduce the ratio at a predictable rate reflecting the differential productivity increases that should be achievable in A&S relative to academic activities? The result

would provide a new paradigm shift—this one targeting the administrative lattice. There would be exceptions, of course, but these would motivate managers to search for assignable causes and mitigating actions rather than another round of explanation and justification that also would serve to establish the need for further add-ons. Such thinking would establish the relations among the expenditure ratios for direct and indirect operating functions as key managerial variables. These ratios could be compared over time, and also across institutions as definitional problems are solved and data accumulate.

To contain A&S costs while increasing effectiveness, institutional leaders must understand the dynamics of the administrative lattice effect and develop a comprehensive strategy for dealing with it. The strategy should begin with quantitative productivity improvement targets—e.g., a limit on the ratio of A&S to educational, research, and general expenditures as discussed in the previous section. (At Stanford, real progress did not occur until the downsizing targets were in place.) The leadership should embed the targets in a vision statement that calls out its commitment to A&S excellence without lattice effects, and its intent to improve performance and contain costs. The leadership should develop or improve employee reward, recognition, and incentive programs, to call forth the best efforts of A&S staff on behalf of the school's teaching and research goals. Finally, it should empower operating units to do their share of A&S work by reducing prior approval requirements, adding equipment and budget where needed, and developing effective training programs.[20] Stanford followed these principles in its APC and restructuring programs, although not always as closely as it might have wished.

Although implementation of Stanford's programs is still proceeding, we can say that several key factors contributed to it initial successes.

- Any major cost-reduction effort must have the full commitment and energy of the top officers and be explainable to the entire community.
- Setting specific resource allocation constraints—in this case budget reduction targets—is essential; as long as cost-plus pricing persists, the pressures for add-on and resistance to change will be overwhelming. For maximum effectiveness, the resource limits should include "stretch goals."
- Developing the concept of a customer who can demand or refuse service and press for lower prices has been a helpful conceptualizing principle. When combined with the principle of fully costing A&S services, this provides an additional constraint on cost-plus pricing. Moreover, the belief that costs can be cut while service is improved is an important breakthrough position.
- The for-profit world's experience with restructuring to contain costs can be helpful to colleges and universities; the lessons should be reshaped to fit the higher education environment, but the amount of reshaping needed for application to A&S services can be accomplished easily.
- Stanford's management made an early decision to move restructuring

rapidly rather than to extend it over a number of years, as is so often the case in colleges and universities. Although this produces more initial disruption, there are significant advantages to getting the changes made as quickly as possible.

- Stanford limited its initial restructuring efforts to administrative and support services, the subject of this paper. It didn't address academic productivity in any direct way, although that remains a subject for future consideration. Other institutions have proceeded differently, by taking on administrative and academic productivity simultaneously.[21] This does not mean to imply that this approach is unwise – just to say that it didn't fit Stanford's particular circumstances.

While Stanford's actions have achieved substantial benefits, hindsight has illuminated some significant problems. For example, while substantial investments have been made in computer systems for replacing labor by capital (such as in the accounting system), it now appears that the investments were not enough. Rethinking the nature of work requires a significant systems infrastructure, and Stanford is now scrambling to catch up. And, as it turns out, computer hardware and software are not the only places where additional investments during the 1980s would have proven invaluable.

Stanford has proved to be thinly staffed in the upper organizational echelons despite the fact that it is generally viewed as a well-managed institution. Changing the A&S culture without disrupting on-going operations is an immensely labor-intensive activity, and at the outset most of the burden must be carried by the senior managers. The morale of middle and lower-level managers is lower than anticipated at this stage, which suggests administrators were unable to devote enough effort to "management by walking around"[22] during this critical transition period.

The committees probably did not do enough create to rewards, recognition, and incentives for those middle and lower-level managers, or to train them in how to manage change in their organizations. Stanford has stressed performance-based compensation for many years; and during the 1980s it mounted a significant rewards and incentives program in the largest A&S unit, yet these programs seemed to fall short of the need. While Stanford provided extensive training on how to handle layoffs, the results were far from perfect and the remaining employees' residual fear and "survivors' guilt" have been problematic.

Business firms that have made the transition from cost-plus pricing to a competitive environment – and downsized substantially in the process – experienced similar problems. But in the end, when the trauma had passed, morale and organizational effectiveness often were better than before. It seems that good management and careful planning cannot prevent the trauma of restructuring, but it surely can minimize it and mitigate its consequences.

Notes

1. The Pew Higher Education Research Program, "Double Trouble," *Policy Perspectives*, 2:1 (September 1989):2B.

2. Arthur M. Hauptman, "Why Are College Charges Rising?", *Education Digest* (August 1989): Tables A-2 and A-3.

3. The Pew Higher Education Research Program, "The Other Side of the Mountain," *Policy Perspectives*, 3:2 (February 1991):10B. The figures cited are medians based on samples taken from HEGIS/IPEDS data.

4. Karen Grasmuck,"Big Increases in Academic Support Staffs Prompting Growing Concerns," *The Chronicle of Higher Education* (March 28, 1990):1.

5. Pew Higher Education Research Program, "Other Side."

6. This is consistent with the findings of Timothy Warner and Kathleen Kern (1989), who concluded that small private colleges faced with waning government student aid appropriations are more likely to curtail their academic budgets than the budgets supporting student life, admissions, and fund raising. See Timothy C. Warner and Kathleen Kern, *Federal Student Aid and the Financing of Colleges and Universities: Some Impacts on Small Private Colleges in the 1980s* (Philadelphia,: The Pew Higher Education Research Program, 1989).

7. William J. Baumol and Sue Anne Batey Blackman, "Electronics, the Cost Disease, and the Operation of Libraries," *Journal of the American Society for Information Sciences*, 4(3) (1983): 181-191.

8. William J. Baumol, Sue Anne Batey Blackman, and Edward N. Wolff, *Productivity and American Leadership* (Cambridge, MA: The M.I.T. Press: 1989), 116-142.

9. Robert Zemsky and William F. Massy, "Cost Containment: Committing to a New Economic Reality," *Change* (November/December 1990): 16-22.

10. The Pew Higher Education Research Program, "The Lattice and the Ratchet," *Policy Perspectives*, 2:4 (June 1990):1.

11. Zemsky and Massy, "Cost Containment":19.

12. Jane Hannaway, "Supply Creates Demands: An Organizational Process View of Administrative Expansion," *Journal of Policy Analysis and Management*, vol. 7: 118-134.

13. Professor Douglas McGregor initiated this line of thought with his "theory Y" (participative management) and "theory X" (autocratic management). See Douglas McGregor, *The Human Side of Enterprise* (New York: McGraw-Hill, 1960).

14. William F. Massy, "Productivity Improvement Strategies for College and University Administration and Support Services." Paper presented at the Forum for College Financing, October 26, 1989, at Annapolis, MD.

15. The Pew Higher Education Research Program, "The Lattice and the Ratchet," *Policy Perspectives*, 2:4 (June 1989):1 and Zemsky and Massy, "Cost Containment":19.

16. Massy, "Productivity Improvement Strategies."

17. Massy, "Productivity Improvement Strategies."

18. The Pew Higher Education Research Program, "The Lattice and the Ratchet": 2.

19. See Catherine Gardner, Tim Warner, and Rick Biedenweig, "Stanford and the Railroad: Something in Common After All These Years," *Change* (November/December 1990):23-27.

20. See The Higher Education Research Program, "The Lattice and the Ratchet" and Massy for further examples.

21. Examples from Bryn Mawr College, Franklin and Marshall College, and the University of Michigan are cited in The Pew Higher Education Research Program, "Other Side of the Mountain": 14B-19B.

22. Thomas Peters and Alan Waterman, *In Search of Excellence* (New York: Harper & Row, 1982).

Questions and Answers

BARBARA E. TAYLOR: Barbara Taylor, Association of Governing Boards.

Have you distinguished, in your work or in your thinking, between growth in productive areas versus nonproductive areas? My research on fund raising, for example, suggests that relatively larger fund raising staffs actually make more money per staff member than smaller fund raising staffs do.

DR. MASSY: There are a few categories of activities where there are marginal revenues that go with marginal costs and those marginal revenues come from outside the institution.

If the revenues that are coming in are useful revenues, if they are not highly restricted for things that you don't want to do, then in my judgment you ought to expand something, if marginal revenue is greater than marginal cost. Same thing is true in investment activities. Where you have marginal revenues, there is a different set of rules. They boil down to the same thing, but you have a different set of rules.

MERNOY E. HARRISON: Mernoy Harrison from California State University, Sacramento.

You had a chart that showed that one segment did not have administrative and support expenditures growing faster than instructional expenditures.

DR. MASSY: I think that was the land grants.

MR. HARRISON: Do you have any information that explains why that is the case?

DR. MASSY: No. That would be a very interesting subject to look into. We have not had a chance to look into it and I wouldn't care to speculate.

DR. ROGERS: Did you take out of administrative and support costs that portion of research indirect costs that are reimbursed?

DR. MASSY: No.

DR. ROGERS: Do you think that is an interesting adjustment to note? If you are going

to compare the growth in administrative support costs, you have to somehow normalize for the fact that a piece of that growth was due to the rapid growth of research.

DR. MASSY: We didn't do anything that fancy. A real full-blown study should do that. Interestingly, the differences are fairly small in the two research university categories. They are bigger in the private college category, but you are right. To the extent that sponsored research was growing dramatically during this period and that it produces marginal costs of administration, that logically would be in there. Actually, sponsored research was not growing all that dramatically during the period from the mid-1970s to the mid-1980s. It was growing in real terms, but so was educational and general (E&G). I don't think it was growing more than the 2.5 to 3 percent that E&G was growing during that period.

K. SCOTT HUGHES: Scott Hughes with Peat Marwick.

I will make a supposition and you can tell me if it is not right. One of the issues Stanford is dealing with, in terms of realizing productivity improvements, shrinking the administrative structure, and the like, is the resistance to change throughout the organization, top to bottom.

DR. MASSY: I will show you my scars.

MR. HUGHES: It goes all the way down to the lowest level clerk or the highest level clerk in the organization. Can you talk a little bit about the way in which Stanford is trying to approach changing human behavior as it relates specifically to incentive programs to encourage people to look for ways to improve productivity and get through the wrenching times that you are going through?

DR. MASSY: I will make a brief comment and Tim Warner or Sue Schaffer, if you would like to say anything, please feel free.

In my judgment, we have done some but we haven't done enough. In the division that I headed until Sue came on and took the business affairs and administration part of it, we had a program called RRI (rewards, recognition, and incentives). We did try to develop systematically a series of incentives. We had a managers' RRI kit that we distributed through the organization. It was replete with ideas and possibilities for a variety of different kinds of things.

I proposed a system of financial incentives, but that has not been enacted. We certainly base salary increases on merit and that is done in a careful way, based on performance evaluation, but we have not gone to any system that would involve

nonbase salary payments, otherwise known as bonuses. We have not done anything of that sort.

Morale, to be honest with you, has been better than it is right now at Stanford. There is some survivor's guilt of those who didn't get laid off. There is still considerable confusion over the new organizational structure. We have some unfilled senior level positions, and now the senior people are distracted by the congressional stuff and the audits. So we are going through a difficult time and we ought to be doing more than we are doing, frankly.

DR. ROGERS: I think we are going to have to stop now.

We are now going to get a different perspective from Jim Mingle. Jim is the executive director of the State Higher Education Executive Officers association. He was appointed as the first executive director of that group in 1984 and represents the executive officers and staff of statewide coordinating and governing boards of the 50 states.

Jim's research, writing, and consulting have included work on minority access, statewide planning, coordination and governance, program review and assessment, and institutional management issues. In 1976, he was the coauthor of the first study to examine the impact of increased minority enrollment on predominantly white institutions in the 1960s, published by the Institute for Social Research at the University of Michigan.

From 1980 to 1982, Jim directed a national study of state and institutional strategies to deal with enrollment decline and financial cutbacks. It sounds like you were ahead of your time. Those have become even more relevant.

More recently, he has turned his attention to the problems of accountability and productivity in higher education. Jim has a Ph.D. from the Center for Study of Higher Education at the University of Michigan and a bachelor's and master's from the University of Akron in Ohio, where he also serves in administrative positions in the areas of continuing education and administration.

Please welcome Jim Mingle.

State Policy and Productivity In Higher Education

James R. Mingle
State Higher Education Executive Officers

When you are last on the program, you look at it and you think, well, you are in the situation where everything has been said; it is just that everybody hasn't said it yet and you are the guy who hasn't yet said it.

The good news is when you follow Bill Massy, the tone of the conversation changes. I have been in numerous meetings with different topics ostensibly, but essentially talking about the same thing. And after lunch, when the politicians leave and we stop talking about how can we communicate a better perception of higher education and we get down to the discussion of how can we actually change the enterprise we are involved in, it becomes a more concrete and I think fundamentally more honest discussion. I think Bill's work over the past few years and the various audiences he has presented it to has promoted that more honest discussion about higher education cost and productivity.

After these remarks, Dr. Mingle presented his paper, the full text of which follows.

This paper discusses the ways in which public policy, as expressed through the regulatory powers and financing systems of state government, influences the productivity of higher education. It reviews the historical use of regulatory policies to achieve this end and suggests several new strategies for consideration. In doing so, the paper also asks whether "productivity" is a valid concept in higher education, and if it is a compatible objective in the political process of resource allocation at the state level.

Economists and system theorists might define productivity purely in terms of the ratio between input and output. This is far too simplistic for the analysis of higher education. Since higher education outcomes are multiple, difficult to measure, and often conflicting, improved productivity requires a value judgment. States do not necessarily fund the most effective institutions, but they may fund the most "needy," the most prestigious, or the most politically-persuasive. It is difficult to separate means from ends in the public realm.[1] It may be cost effective for the state of Alaska to close its institutions and send its residents elsewhere, but it is politically unacceptable. The substitution of technology for faculty may be productive, but such a substitution will be rejected if it violates faculty and student sense of the collegiate experience.

The "optimum" solution to the issue of defining productivity — in terms of costs and benefits — is seldom sought or considered; rather, states rely on historical

relationships, equity considerations, and "distributional politics." [2] Wildavksy (1974) argued that in the public sector, budget decisions are made incrementally, not through a fundamental rethinking of priorities. This results in the establishment of traditional funding patterns as the predominant influence on the distribution of resources across institutions and across goals.

These historical relationships are built into both "incremental" and "formula" state budget systems through assumptions about class size, workload, and faculty compensation. When conditions change to upset this historical equilibrium, the formulas are often adjusted in order to maintain the "stability" of funding, which is at least as powerful a goal as efficiency. Occasionally, when state resources are plentiful or scarce, there are changes in priorities. But even in this atmosphere, equity considerations predominate. There is a kind of turn-taking during periods of growth in state budgets — first one priority or interest group is satisfied, then another, then back to the first. In periods of retrenchment, equity or "equal sharing of the pain" is also the primary response.

The productivity debate at the state level must begin first with a healthy dose of realism about what can and cannot be accomplished. It must then move to a discussion of values. Which among the mix of higher education outcomes do states want to support? What is this year's priority? The debate always results in a set of accommodations, whereby various interests are satisfied.

Changing Views of the "Productive Institution"

In the 1950s and 1960s, there was agreement between higher education and the states as to what constituted a productive institution deserving of public subsidy. Such an institution was continually expanding both in the number of students enrolled and the scope of its curriculum. State funding policies consistently rewarded both numerical and programmatic growth. But these two characteristics of a "productive" institution emerged from different forces. Growth in size came about from external pressures, growth in scope and specialization from internal ones. Enrollment growth, and the state support it brought, funded the programmatic growth and specialization that the faculty sought.

Sometime in the 1970s, and certainly by the 1980s, the accommodation between external public goals and internal academic goals began to break apart. First, states began to question the value of enrollment growth alone when it became apparent that many students were dropping out before completing their studies or finishing their degree programs with limited skills. Disappointment over the success of minorities in higher education became an especially glaring shortcoming of the system. In response, state leaders supported a variety of new approaches to achieving both access and quality. Martin Trow interpreted the student conflicts of the 1960s in the context of a transformation from elite to mass higher education.[3] The debate over the quality of higher education in the 1980s can be viewed in the same light — our continuing struggle to find a "productive" formula for delivering mass higher education through a system ill-designed for the task.

The numerous task forces, national commissions, and study groups formed in the past decade, though different in focus and composition, present a consistent set of recommendations. "Improving the quality of undergraduate education" was, for example, the number one priority of state higher education executives in a recent survey.[4] Only the level of rhetorical overkill seems to vary. These reports provide a window through which we can construct a new vision of the "productive" institution in the 1990s. First and foremost, the productive institution is a "teaching" institution concerned with student learning and the progress and success of students. The students are not just passive receivers of a professor's lectures but "active learners" engaged in critical thinking. The faculty, as a whole, is less engaged in research and more engaged in a broader definition of scholarship.[5] The curriculum is focused on a more limited set of objectives concentrating on general education curriculum and agreed upon by the faculty. The administration is lean and policy oriented, allowing decision making and rewarding effort at the lowest possible level. The state bureaucracy is benign and free of red tape and excessive intrusion. The institution is accountable to the public for the quality of outcomes, most importantly the performance of its graduates.

This vision of the productive institution as a place that effectively instructs its students is certainly not the only vision presented and debated in state capitols, but it is one that is driving the current debate about programs, support, and accountability. It is also a convenient concept against which to judge the variety of policy tools available to states.

The State's Ability to Effect Change: Robust or Anemic?

There are two schools of thought regarding the state's role in influencing the agenda of higher education institutions. One is that the state has powerful tools — most notably the power of the purse and the power of public opinion — to influence the behavior of institutions and faculty. The other is that the state, for the most part, is helpless to influence the norms, values, and culture that shape the production process and outcomes of higher education.

The state's influence is potentially substantial, but its exercise of that influence is limited by the cultural traditions governing higher education and interest group politics that ultimately require trade-offs of one goal against another. Furthermore, because the budget reflects rather than shapes higher education values, changes in those values must precede or take place simultaneously with budget changes. Budgetary actions can and do influence higher education, but these actions are more likely to follow other actions at the state and institutional levels than lead them. It would be unusual, for example, to expect a major increase or redistribution in appropriations toward the goal of improved undergraduate education without public pressure and institutional requests that such a shift take place.

The state's influence in affecting productivity is also moderated by the dynamics so ably described by William Massy and Robert Zemsky.[6] From the state perspective, two factors stand out as especially troublesome: the lack of consensus about purpose and the absence of an academic management structure to implement that purpose.

Rational planning, upon which the state pins so much of its hope for productivity improvement, assumes a structure to carry out that plan. Yet numerous organizational studies have noted the absence of such a structure, especially in matters of curriculum and faculty workload. Even if a state is successful in focusing institutional efforts, it must depend upon institutional leaders and faculty to implement those objectives. This reality is a source of continuing frustration, and sometimes intervention, on the part of the state.

State Tools for Influencing Productivity

Improving the "efficiency" of the system and eliminating "unnecessary duplication" are words often used in statutory mandates given to statewide coordinating and governing boards. But state boards are also charged with expanding access and "improving quality." No organization charged with such conflicting goals can be entirely consistent over time. State boards certainly are not. They are advocates for support and regulators of excess, negotiators in an intensely political process and developers of rational and systematic plans.

The tools of the trade of coordination are now well developed. They relate to budgets and plans aimed at rational, data-based decision making, as opposed to purely political negotiations where power and prestige tend to dominate. "Improving productivity" is seen as a quest for doing the best possible job with the resources available, while never abandoning the idea that new money would be beneficial. In their attempt to respond to pressures for improved accountability, state boards seek better information on performance as the *quid pro quo* for seeking additional public support.

A review of the strategies and tools that states have used to seek "improved productivity" in higher education and a discussion of how they are being adapted to achieve the "new vision" of a productive institution described earlier follows.

Plans, Mission Statements, Program Review

Master plans and their accompanying role and mission statements represent an effort on the part of state and system boards to create meaningful divisions of labor among the state's competing institutions. These are essentially boundary agreements — geographic and/or programmatic — designed to minimize conflict for resources. Master plans tend to act as a constraint on institutional aspirations by specifying what institutions can do and implying what they cannot do. Because most institutions wish to keep their options open, these statements engender great opposition, which leads some states to avoid codifying institutional roles and missions or expressing them in the most general terms.

In combination with role and mission statements, programmatic oversight is used by state boards to review existing programs and to approve or disapprove new programs proposed by institutions. Occasionally this results in the disapproval or elimination of programs. As a productivity tool, programmatic oversight is not

particularly effective, except at the state or system level. At these levels it places limitations or boundaries on institutional program offerings and controls the proliferation of potential duplicate programs. Program oversight, however, does not directly affect expenditure flows within organizational units.

Organizational theorists argue that clearly defined missions are central to productive organizations. But this appears to be contrary to the norm in higher education. Colleges and universities operate around an implicit rather than explicit consensus over goals.[7] Gordon Davies argues persuasively that "it is in no one's interest that missions be defined clearly" because of the conflict such definition engenders.

> A curious kind of oblique planning technique has developed at the state level. It is highly political, indirect, and situational. It aims at doing what is possible at any given time and does not attempt to provide a complete set of goals or strategies for public debate. It uses whatever tools are available to move the institution or system toward an objective, but it often does not acknowledge the objective itself.[8]

In spite or because of this reality, many state and system boards continue to push to make what is implicit explicit, and what is situational routine through planning rubrics and "rational" criteria. Planning as a *modus operandi* seems firmly entrenched in public systems of higher education. The effect of planning on the development of higher education varies considerably. In some states, the master plan has taken on the aura of law handed down from Moses; in others it might be likened to a speed bump in the road, slowing but not deterring the institutional march toward sameness. The plan may be selling the virtues of diversity, but nobody seems to be buying.

The public dissatisfaction with undergraduate education has put renewed pressure on state boards to search for the right combination of regulatory language and positive incentives to gain institutional acceptance of this objective. Missouri, for example, gave one of its baccalaureate colleges a "statewide mission," a designation formerly reserved for the flagship research university. New Jersey, through a substantial competitive grant program, pushed institutions to develop distinctive missions that benefit undergraduates (an entire curriculum organized around work-study, for example). Maryland, in its latest round of planning, doggedly insisted that "teaching" be elevated in the codified role and mission statements for the overwhelming majority of its four-year campuses. Now it is asking that institutions show how their tenure and promotion policies relate to this central teaching mission.

Revenue Limitations

Not so much a strategy for productivity improvement as a periodic reality, limitations on revenue automatically squeeze organizational slack out of the system. Assuming that quality remains the same (or remains unmeasured), productivity ostensibly improves. Few would argue that unexpected revenue shortfalls like those currently experienced are productivity-improvement devices. Because decreasing costs, contractual agreements, or plain lack of will prevent the selective targeting of these cuts, they are unlikely to focus mission or to enhance quality. More likely they

will engender conflict, reduce morale, and have little effect on changing faculty activity patterns.

Regardless whether it is a "good year" or a "bad year," the fundamental policy discussion about higher education is about revenue limitations. Debates about the quality of undergraduate education, assessment activities, administrative fat, and just about any other issue are essentially a side-show to the discussion about the size and distribution of the appropriation. Most parties to the debate agree that more money for higher education would be beneficial, but disagree on the magnitude of the needed increase and the political expectation that it can be obtained. Institutional or system requests typically exceed state board recommendations, which in turn usually exceed the governor's recommendations. The legislature provides the corrective factor, bringing the actual appropriation back into balance between a conservative governor's recommendation and unrealistic institutional requests. If a legislature swings too far in favor of institutions, which happens often, the appropriation can be "corrected" by the governor through his or her power to hold back a portion of the funds during the year (usually labelled recisions or give-backs).

As for tuition, it has become common in recent years to allow institutions to use tuition increases as a way of making up the difference between their original conception of need and the final appropriation. These "user fees" are more easily instituted than increased taxes and can even be used to make up for mid-year shortfalls.

All of this happens on an annual or biennial cycle in an endless sequence of short-term horizons. Massy and Zemsky suggest that the reality of long-term revenue limitations can be a stimulus to productivity improvement and is in fact a necessary precondition for that improvement.[9] If states could develop more long-term budgetary plans (and stick with them), and if the certainty of those plans could be communicated to higher education, productivity improvement would become a more compelling priority. Some state budget officers are presenting their governors and legislators with careful five-year projections of both revenue and mandated cost increases across all state functions. These projections can be the starting point for a realistic debate on higher education's share of the state budget.

Such a long-term view is difficult, however. The total size of a state's budget depends not only on future economic conditions, which are uncertain, but on the public's willingness to tax itself. No matter how much current realities might call for productivity improvement, one can hope for future economic growth and lobby for more taxes.

States can seek to place limitations on cost expansion by exercising direct control over tuition. Some states place explicit caps on tuition or apply political pressure to constrain increases. With their call for an end to "cost-plus pricing," Massy and Zemsky suggest that states prohibit tuition increases after the state appropriation has been made.[10] This would force institutions to institute productivity improvements through internal reallocation or reduction in size and scope.

Unfortunately, the same political leaders who oppose increases in tuition may also

oppose cutting back access. The result of revenue limitations combined with increasing workload is usually a deterioration in instructional activities, as class size increases and faculty accelerate their pursuit of other sources of revenue, like federal grants.

Base Budget Changes

Periodically, state boards, in cooperation with institutions, reexamine the formulas and funding rubrics that provide the rationale for the ongoing base budgets of institutions. This can take place in a variety of ways, none of them similar to the zero-base budgeting and PPBS systems envisioned by theorists in the 1970s. Rather than the change envisioned by these comprehensive systems, base-budget reviews tend to seek funding stability while making changes on the margin.

Commonly these reviews consist of determining appropriate institutional peers for salary comparisons and debating whether enrollment should be the central factor in determining the size of the appropriation. Occasionally, in response to pressure from one direction or the other, states will adjust formulas to accommodate desired improvements in such areas as support services, libraries, and equipment and maintenance budgets. These adjustments are usually in response to cost realities in the marketplace — the increasing cost of library materials or the increasing cost of faculty in business and engineering are recent examples. State boards occasionally have taken the initiative to improve base-budget funding for reasons unrelated to costs, but these instances are less common.

One of the earliest reports on improving undergraduate education suggested that, in order to provide institutional incentives, states "front-load" formulas, i.e., pay more for lower division instruction than for upper division and graduate students.[11] The author of this report assumed, as many do, that state budgetary practices are a way of affecting allocation of resources *within* institutions. But state budget changes primarily affect the distribution of resources *among* institutions, so any fundamental changes will give rise to significant opposition from the parties negatively affected, in this case major research universities.

While base-budget formulas tend to reflect, rather than lead, institutional change, there are ways in which they can influence productivity. Without knowing the effects on both costs and benefits, however, it is difficult to assess their impact. Formulas other than enrollment based tend to raise per-student costs, since they allow institutions to reduce workload without penalty. But such formulas presumably improve outcomes because institutions will lose the incentive to enroll unqualified students (although they often continue to do so to gain tuition and student-carried aid revenue). States can also reexamine the student-faculty ratios that undergird distribution formulas. Many formulas are out of date and assume ratios that in fact have changed dramatically. Ideally, student-faculty ratios are built from the ground up by examining the facilities, instructional method, and staffing needed to effectively educate a student in a given discipline — obviously a complex and difficult task. An easier approach is to conduct cost studies by program and then establish norms.

A comparison between what is assumed to be "average" faculty teaching loads and actual loads also can be enlightening. Institutional awareness that it will have to explain low teaching loads may be enough pressure to end the practice. A legislator in Florida recently suggested that institutions publish their average freshman class size and their total student-faculty ratio and then explain the difference.

Another way in which states might improve productivity is to examine the legitimacy of the peer-comparison system. Currently, peer groups are constructed by selecting institutions similar in scope and structure. But institutions (and state boards) consistently seek peer comparisons that put them "below average" so that rationales can be developed for increased funding. This increases cost without necessarily increasing quality. One way of moderating the cost-escalating aspects of these comparisons would be to compare outcome data among the peer group at the same time as making cost comparisons. Separate peer groups might be developed solely on the basis of outcomes selected by institutions — employability of graduates, retention rates, or passage rates on licensing exams. Goals for faculty salary increases should also be compared to external measures such as increases in the local consumer price index and salary increases in the private sector.

Budget Incentives and Reallocations

Those state policy makers who lament the lack of connection between an institution's activities and the state's goals seem inevitably led to manipulation of a budget toward desired ends. The current trend is toward "incentive funding" in the form of categorical appropriations targeted at particular state objectives (e.g., centers of excellence); matching grant programs that require institutional matches (e.g., endowed chairs); competitive grant programs around a state-developed request for proposal (e.g., assessment or curriculum revision); or performance funding that pays increments for progress on agreed-upon measures and activities (e.g., gains in test scores, obtaining of accreditation).

Folger, Berdahl, and others have described the extent and effects of these grant programs.[12] A 1989 survey found 139 such programs in 32 states. The most common purpose of these programs was state economic development, including projects for technology transfer and applied research. The next most common objective was minority access and related issues, followed by eminent scholars' programs and undergraduate education. All of the programs were justified as "quality improvements"; none were targeted specifically at "productivity improvement," although if they required institutional matches or redirection they could be considered reallocation strategies.

Folger notes that the most difficult state priority to influence with incentive funds is the improvement of undergraduate education. In evaluating the Tennessee Performance Funding project, which pays institutions for improving certain student learning outcomes, Folger found much greater commitment to the goals of a program at the administrative level than among faculty. (Institutions earn a financial incentive based on performance, but may spend the money as they see fit.) "From the faculty or

student perspective, the rewards for making improvement in their program are problematic, while the costs are likely to be substantial." [13]

Politically, these incentive funding programs can be very important in justifying the appropriation. Even if they amount to only a small percentage of the total state budget for higher education, they often become the focus of attention in legislative debates concerning accountability. The programs are also politically vulnerable and often become the first victim of budget cutbacks.

While state boards and legislatures are not in a direct position to reallocate funds among program priorities, neither are they powerless to affect this reallocation. They can be especially effective in influencing new program development. State coordinating boards such as those in Illinois and Tennessee now develop budget recommendations for new initiatives grouped around themes such as "improving the quality of undergraduate education" and "economic development and work force preparation." They are also including a line for "reallocation" that essentially requires contributions from base budgets to these new program priorities. (Though the Illinois budget does not specify the target of this reallocation, a similar budget plan in Tennessee calls for reallocations from administrative support.)

Budgets in these states, of course, are request devices, not allocation mandates. But the budget is not without influence. Traditionally, institutions allocate money according to the priorities upon which the budgets are built. If they do not, they run the risk of being punished in the next year's appropriation.

In addition state boards, through technical inquiries, can require documentation of how new program money is spent and all reallocations within the institution. They can also document over time the shift of resources among broad categories of expenditures such as instruction, operations/maintenance, administrative support, and research.

In a recent analysis, the Illinois Board of Higher Education found that its public universities had reallocated about 3.5 percent of its base over a five-year period. The reallocations in this case came out of operations/maintenance and instruction and went into research, public service, and support functions. Whether this was a "productive" reallocation in both size and scope depends upon perspective. Those who worry about the commitment of universities to undergraduate education (the student lobby in Illinois, for example) objected to the flow of dollars away from instruction; those seeking greater commitment to minority success were pleased to see the increases in support services.

Institutions can and do initiate reallocations on their own, especially if public pressure and dissatisfaction is substantial. The 1990 budget woes in Minnesota led the University of Minnesota to withdraw its entire legislative request for funds and in its place propose a $60 million internal reallocation that includes the closing of a small campus.

Deregulation/Management Flexibility

Following the recession in the early 1980s, a number of states initiated policies that were often characterized as providing greater "management flexibility" for institutions of higher education.[14] None of the measures was directly concerned with the improvement of student learning, however. On the revenue side, this deregulation enabled institutions to raise tuition and to retain funds past the end of the fiscal year. Presumably such efforts have improved productivity by avoiding year-end spend-outs and allowing the institution to accumulate funds for major purchases such as equipment. But the measures also have increased costs, as evidenced by the significant increases in public sector tuition during the decade.

On the expenditure side, a number of efforts to free institutions from the position control and procurement regulations were seen as contributing to "bureaucracy and red-tape." More recently, some states have taken this deregulation a step further by converting money-losing public teaching hospitals to private, nonprofit ownership. However, such changes are subject to state constitutional provisions that allow parties such as employees with contractual rights to contest such moves.

Structural Change

A common legislative response to the productivity question has been a call for structural and governance changes. Aims McGuinness documents the history and motivations of the numerous task forces, blue ribbon commissions, and consultant reports that have examined governance and reorganization in the states.[15] He cites a number of perennial issues that lead to these initiatives: actual or potential duplication of high-cost graduate and professional programs; conflict between the aspirations of institutions in close geographic proximity but separately governed; barriers to student transfer; proposals to close, merge, or change the missions of institutions; legislative reaction to intense lobbying; confusion over the governance of vocational, technical, and occupational programs; and concerns about the effectiveness of existing statewide boards.

The net result of all of this turmoil over governance was noted in a recent study:

> The drift in the public sector of higher education, especially during the past 40 years, has been clear — toward consolidation and toward control. Nearly 80 percent of students in higher education are now in the public sector. About 70 percent of these students are on campuses within multicampus systems that do not have their own governing boards.[16]

Clark Kerr and Marian Gade, the authors of this study, estimate that over one-half of all students are now enrolled in 120 systems covering 1000 campuses. "The freestanding public campus headed by a board of trustees fully under its own authority is now the exception."[17]

Kerr and Gade cite two reasons for this consolidation: government's interest in controlling missions and budgets in order to make effective use of resources; and the

desire for state leaders to deal with fewer rather than more higher education leaders. This analysis assumes that the forces of consolidation have come from outside higher education. This is true, but they have also come from within. "Friendly" takeovers are supported by faculties and local supporters who seek the affiliation, wage scales, and added prestige of association with a larger university. They hope that being part of a "system" will lead to access to broader scope — especially graduate programs. The desire for large successful intercollegiate athletics programs is also a factor in this consolidation trend.

Kerr and Gade cite numerous "costs" to this consolidation, focusing on loss of autonomy, collegiality, blurred lines of responsibility between system heads and campus heads, increased bureaucratization, etc. What they do not note is the effect of this consolidation on the mission of the institution — its mix of outcomes.

Are these multicampus systems less productive than single campus boards? The economies of scale suggest that they gain certain advantages on the administrative side and a certain synergy of quality because of their scope on the academic side. On the other hand, multicampus systems add an additional layer of bureaucracy to the enterprise. Do multicampus systems neglect teaching and learning functions more than individually governed campuses? There is no empirical proof for either of these questions, but they are worthy questions to ask.

Surprisingly, none of the national reports focusing attention on undergraduate education have suggested governance changes as a solution. In part this is because of the reluctance of external groups to threaten existing structures; but it is also a matter of faith among even the toughest critics that the tripartite mission of higher education — research, public service, and teaching — can be carried out in the best of our large public universities.

If diversity across the system and focus of mission within a single campus is a desired public policy objective, governance changes to stop or reverse the trend toward consolidation and increased campus size may be needed. States may wish to consciously expand the number of autonomously governed campuses with a single-purpose focus, say baccalaureate education. At the same time, they might move research and public service functions of universities into separately funded and governed institutes and research centers. Diversity might also be achieved by more substantially supporting the private sector, either through direct grants, "state-assisted" status, or student-carried financial aid.

Enrollment/Graduation Standards

The establishment of admissions standards, the development of course requirements, and the eventual awarding of a degree remain, in higher education's mind, its most fundamental prerogatives. Yet all these goals have been a matter of public debate, along with legislation and regulation, in recent years. Either directly, through statewide admissions standards, or indirectly, through enrollment caps, state boards and legislatures can influence what types of students are admitted to what institutions. They also influence enrollment patterns by their decisions to prohibit or

reward subsidies to certain categories of students. Most states do not provide student aid, for example, to students enrolled in nondegree proprietary schools (unlike the federal government). States also encourage or discourage, through tuition policies, the enrollment of nonresidents.

Many state and system boards have instituted minimum standards for enrollment, usually in the form of mandatory high school courses. Some have mandated exams for the assessment of basic skills testing that are used as a gate to credit enrollment. A few states, such as Florida, use exams for progression from lower to upper division undergraduate programs. Both state and federal governments are examining new restrictions on eligibility for financial aid until more substantive proof of "ability to benefit" can be provided for those without high school diplomas. Groups such as the Task Force on Skills of the American Work Force are calling for performance-based assessments to be used in lieu of high school diplomas and in various occupational fields.

Moreover, state and other external entities have steadily increased their effective power over graduation standards. Licensing boards in the professions indirectly influence curriculum. Passage of licensing exams becomes an effective graduation credential.

Such actions should not be surprising, given that enrollment in higher education creates a substantial public subsidy. In many ways, policies aimed directly at the student and his or her ability to profit from a subsidy may be the most potent productivity strategy. The trick, of course, will be to accomplish such an intervention without harming the goal of access.

Institutional Performance Standards

We are now entering the third decade of debate about the efficacy of using measures of performance, especially student learning, to assess and improve institutional effectiveness. Assessment has grown from an esoteric conversation among researchers to a national reform agenda encouraged by a wide variety of state and system accountability provisions and accreditation standards. National goals adopted by the president and state governors add urgency to the search for more and better measures of progress.

Given the great diversity of such measures and their state of development, it is hard to characterize their effect. At the state level, they are only beginning to be used in policy decisions that influence resource allocation decisions. Their use as a device for calling attention to shortcomings is more widespread. There is evidence of this in the reports on graduation rates of student athletes, retention rates of minorities, employment rates of vocational education students, default rates of proprietary students, and passage rates of teachers on licensing exams.

Whether these outcome measures provide enough information to make the necessary changes in process remains problematic. At the very least they are changing the standards of accountability. No longer is it acceptable for institutions to point

merely to their enrollment growth to justify public support. Now they must call upon a wide range of data that demonstrate their effectiveness. Some of it is misleading, and much of it overlooks the central question of student learning, but it is a step in the right direction.

Technology

Instinctively, states seem to know (or hope) that technology is the solution to the productivity problem. To date, it looks more like a cost escalator than a productivity solution. As institutions have sought to upgrade the quality of their equipment, the capacity of their computers, the technological sophistication of their libraries, and the expansiveness of their telecommunication systems, they have generated enormous costs. There is no doubt that increased capacity has allowed administrators and faculty to work better. But technology has not, in great degree, lessened the labor-intensive nature of the enterprise because it is viewed as a supplement, not an alternative.

Technological change has had its greatest effect on research and academic support. Its use as an alternative to traditional teacher-led classroom instruction runs into several barriers. Institutions already have significant investments in land, building, laboratories, and tenured faculty who constitute the current "production process." Furthermore, cutbacks in face-to-face contact between students and faculty are viewed as declines in quality, not improvements.

But attitudes are changing quickly and there a number of areas where state policy might accelerate the use of technology specifically to improve productivity. Delivering education through telecommunications systems at the work site is increasingly being employed as an alternative to expansion of campus programs in such fields as graduate business and engineering.

Coordination of telecommunication systems among schools and colleges, and among units within the higher education system such as libraries, should be a priority of state boards. States should also consider new investments in instructional software and encouragement of its use by faculty.

Conclusion

Burton Clark believed that ambiguity was greatly undervalued when it came to higher education. "Two cheers for disorder," he proclaimed. What planners, coordinators, and administrators needed, he said, was an ideology that told them that they were "doing all right when the system as a whole looks like a mess, nearly everyone in the system feels powerless, and no one can clearly identify who is doing what to whom." Clark called that ideology "pluralism." [18] Charles Lindblom called it "the science of muddling through."[19]

Most state policy makers recognize this reality. In fact, many thrive upon the ambiguities surrounding policy making in higher education. They seek change through the tools of a pluralistic democracy, namely the power of public opinion and

persuasion. At the same time, they look for an antidote to the intense political infighting over state resources in data-based planning and budgeting systems.

At the heart of the conflict over productivity in higher education is a conflict over purpose. Multiple and ambiguous goals are accepted and tolerated by the public. What is perplexing is higher education's own disregard for the value of diversity.

Instructing undergraduates, many of them poorly prepared, seems to be a mission that no one in higher education is very enthusiastic about. Yet it is a growing necessity to our economic and social well being. Building enthusiasm for such an undertaking and a "production process" that is effective is no small challenge. It will take all of the tools in the state policy makers' arsenal — both the tools of the democratic process and the tools of the planner. More importantly it will take a greater willingness, both in higher education and among the public, to expand our definitions of quality and to reward that new definition appropriately.

If bottom-up change were to alter the values and norms of higher education, there is little doubt that states would respond with appropriate rewards. But in the absence of that change, they will apply the tools they have, sometimes effectively, and sometimes not. It's called muddling through.

Notes

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10. Massy and Zemsky,*Dynamics of Academic Productivity*, 23.

11. Study Group on the Conditions of Excellence in American Higher Education, *Involvement in Learning: Realizing the Potential of American Higher Education* (Washington, D.C.: National Institute of Education, 1984).

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13. Folger, "Designing State Incentives," 58.

14. James R. Mingle, *Management Flexibility and State Regulation in Higher Education* (Atlanta, GA: Southern Regional Education Board, 1983), 1-16.

15. Aims C. McGuinness, *State Postsecondary Education Structures Handbook, 1991* (Denver, CO: Education Commission of the States, 1991).

16. Clark Kerr and Marian L. Gade, *The Guardians: Boards of Trustees of American Colleges and Universities.* (Washington, D.C.: Association of Governing Boards, 1989), p. 115.

17. Kerr and Gade, *The Guardians*, 116.

18. Clark, *The Higher Education System*, 273.

19. Charles E. Lindblom, "The Science of Muddling Through," *Public Admninistration Review*, vol. 19,:79-88.

Questions and Answers

DR. MINGLE: I would welcome any suggestions on how that peer comparison system might be better developed and more finely tuned. I suggest one in here, but it is one that certainly frustrates me.

We have a lot of experts in the room about what horrible things the states do to destroy productivity and initiative. One thing we don't do is we don't fund any of the organizational development activity, the RR&I stuff that Bill talked about.

FREDERICK FORD: Fred Ford, Purdue University.

One of the things that we are seeing now is the area of measurement of outcomes. Everybody recognizes the softness of it and the difficulty in doing it with any great precision, but it is frustrating because it gets applied across a broad spectrum of institutions that have different missions.

It is very difficult to respond to. I see it in our state and it gets spread quickly. It is like a virus that goes through all states. I see that as the next wave of activity that we are going to be faced with. That generates hiring more staff to collect data to justify and so on, which is back to the Bill Massy comment earlier about productivity.

I would like to hear your comments from the states' point of view relative to that phenomena.

DR. MINGLE: If the virus is just getting to Indiana in 1991, I guess you should count yourself fortunate. It has been around for a long, long time. I think institutions in other states have accommodated themselves to it and recognize that, in fact, it is a quid pro quo for increased or continuing support. Some institutions have found that, lo and behold, maybe they can find out something from knowing whether or not their graduates are employed in the field in which they trained, whether or not their students are satisfied, whether or not they are graduating and retaining students in numbers among comparable institutions.

That is not to deny the measurement problems that you are talking about, but once those measurement issues are discussed and debated and refined, people get beyond that. They become positive accountability measures to keep generating public support and institutional change agents to change curriculum.

I am generally positive about them and I know that they are fought tooth and nail by institutions.

JAMES F. SULLIVAN: Jim Sullivan, University of California-Davis.

The focus of our conference has been on cost cutting and productivity

improvements in the nonacademic side of the university environment. You brought up faculty productivity. Some of us think that is a crop that is ripe for harvesting.

It is probably correct that we should start with the nonacademic administrative side. But it is going to take time for us to implement any faculty productivity improvements. I won't go into the reasons for that, but programmatic changes among faculty take a much longer period of time.

That leads me to two questions. One is how do we get academic productivity cutting or review—that is a better word—on the agenda at the present time, given faculty's reluctance to talk about it and administrators' knowledge that to talk about it is difficult and sometimes shortens one's tenure as an administrator?

A second question, perhaps less important, is why would we want to improve academic productivity in a public institution if it is formula driven, which would mean that probably any improvements and any cost savings would go back to the state government as opposed to staying on the public university campus?

DR. MINGLE: Let me answer the second part. Then could I put Marilyn McCoy on the spot to respond to the first part? Are you willing to do that, Marilyn?

How do you put academic productivity on the agenda of an institution? In terms of why you would do it in the public sector, I don't think funding formulas are dictated from above. I think they reflect the values that institutions want. The short answer is I think you would find great enthusiasm and support for a reallocation plan from the state legislature, if you would propose that leadership plan. I don't think it is something the legislature would oppose or take away from you. It may take it away from you for some other reason, because there is no money in the state treasury or the prisons have to be funded.

Northwestern University, where until Marilyn and Arnie Webb came management was a dirty word, knows something about how to put academic productivity on the agenda.

MARILYN MCCOY: I would shrink from putting it quite in those terms. First of all, I wouldn't ask the question on academic productivity of the state. Having been in a public institution and a private institution, I think if those initiatives can occur internally, it is going to be far better.

We have had a system of program reviews for both academic and administrative units. Strangely enough, the initiative for this activity came from the faculty of the institution. It came because there had been a series of budget problems and faculty felt that there had not been sufficient information on the part of the management and the faculty didn't have adequate voices in terms of how that input was provided.

The whole question of academic productivity is very much one that the institutions have to deal with. It is not something that I would stand up and give a quick

formulaic response to. It has many different dimensions to it. I must say that one of the unintended but very positive spinoffs that we have had in doing this review process over six years—and we are now in the final year of our first phase—is that we have had faculty reviewing administrative units. I can't tell you the multitude of dimensions of that process in itself.

There is so much suspicion on the academic side of the administrative side that it has been a revelation for academics to come in and closely examine what is happening. We have both internal teams and external teams. Both parts are critical because when faculty look at a development office, all they see are dinners and staff and that kind of thing. They get some perspective when they start to see what happens at other institutions and get some barometer read in a relative sense.

That is at one level. There is another level when you start getting into this whole issue of undergraduate education and faculty work load and the checks and balances. I was interested in Mike Tierney's presentation today where he said they go in and they just cut down the number of courses. It is an interesting way to approach it.

We are looking at it from the other side, trying to lay out the courses that are being offered in various different departments and to get a sense of how much of those are undergraduate and graduate; where is the faculty work load going; to what extent are faculty self-defining.

The management and issues of productivity on the academic side are very much part and parcel of the management of institutions. The role of department chairs is another unsung but critical layer in that process. Typically, we don't view department chairs as a critical part of the management of institutions, yet they are the ones working with the faculty who are intimately involved in how you define academic productivity.

In a sense I am ducking the question. We are beginning at our institution to look at some of these questions, but it is a long and arduous task; it is not a quick fix. Beginning the discussions and looking at each of these areas is a first step.

DR. MINGLE: I don't have a last word, Fred. I think right now is a great opportunity. The plus side of the revenue shortfall situation is that you can make the changes internally and you can gain some points with your governors and legislators at the same time.

I notice the University of Minnesota withdrew its appropriation request in a year in which they knew there wasn't any money. They said, look, we have a $60 million reallocation plan here; we are interested in undergraduate education. That is what you are telling us you are concerned about. I think they are going to make a lot of points with the public and they will get back their support when the state tax revenues come up again.

DR. ROGERS: Thanks very much.

A Look Ahead

Future Directions

Janet S. Hansen
The College Board

I was asked to wrap up this meeting with some brief thoughts about future directions. I promise you I will be brief, because we have been talking all day not just about where we are but where we might go in sorting out the strategic finance and management issues of the 1990s.

Rather than try to summarize a discussion that we have all heard, I would like to sound two broad themes. Both have implications for the future directions of our discussions about higher education funding and administration.

They are themes that struck me recently as I was reading an OECD (Office of Education and Continuing Development) report on higher education financing in that organization's member states. I have heard these same two themes running through a lot of our discussions today, sometimes implicitly and sometimes quite explicitly.

The first theme is really a truism. Higher education finance and management are means, not ends. Higher education has changed dramatically in the past three or four decades. Our efforts to find efficient management and financial techniques almost inevitably have to be accompanied by a broadly based debate about what we expect higher education to be as we approach the beginning of a new century.

We have reached a point in our history when restricting access to higher education to an elite, relatively homogeneous minority of young people is no longer appropriate. At the same time, our economy demands not just that higher education provide community leaders, as it traditionally did, but also a large population equipped with the specific skills needed by a technologically advanced society. The kinds of education implied by these changes, as well as the kinds of students that need to be educated, are clearly different than they were.

Without clarifying the mission and goals of higher education, both in general and at the system and institutional levels, I don't see how we can measure progress or make decisions about how to allocate responsibilities, especially financial ones, for achieving these goals.

I don't mean to minimize the difficulty of this task or to suggest that we can approach it in exactly the same way that other types of enterprises do. In his paper, Jim Mingle talks about the conflicts that are engendered by attempts to reach explicit rather than implicit consensus over goals in higher education.

On the other hand, Mike Walsh and others have suggested that perhaps we are not so different from other organizations as we often like to think. One direction that we must continue to pursue is the understanding of what we mean when we seek such things as equity, efficiency, and quality from higher education at the end of the 20th

century.

The second theme that I want to bring up is that funding mechanisms aren't just devices for allocating resources from providers to users. They are also an important channel of communication between providers and users. The OECD report that I mentioned points out that the terms on which funds are offered show the priorities of those who supply them. The ways in which they are used reveal the preferences of those who receive them.

An examination of the financing of higher education can help to interpret both the real aims and objectives that underlie political rhetoric and the differences between the priorities of the suppliers and the users of finance. This suggests that another useful direction to pursue would be to take maximum advantage of the possibilities for communication that these channels offer.

Again, I don't mean to minimize the difficulties. As a nation, the United States is unique in the extent to which we draw on diverse sources of support for the higher education enterprise. I have elsewhere argued that it is precisely this dependence on almost all possible providers that has given us the wherewithal to finance the widest access to advanced education in the industrialized world.

As we cope with the economic stringencies of the 1990s, we will certainly be tempted to broaden that financial sponsorship even further if we can identify possible supporters that we are not already hitting up. To my mind, though, this only strengthens the case for ensuring that those who provide the funds for higher education and those who use them understand where the other guy is coming from.

We have talked over and over again about faculty. Clearly faculty need to understand the concerns over teaching and the quality of undergraduate education that we know are widespread among families and the public officials they elect. We heard those concerns expressed by at least some of the representatives of public officials this morning. I don't have any better answers than other people who have brought this up about exactly how we do this, but somehow we need to engage faculty in the debate over what they do and how their personal and professional goals mesh with the goals of various constituencies who support their work. Maybe a starting point is to bring into discussions like this one not only representatives of associations of administrators, but representatives of the discipline-based learned societies of faculty, where issues of appropriate faculty and work load and working conditions are debated along with the latest developments in research and theory.

At the same time, there are important messages that users can be sending to providers of funds. For example, if public institutions are increasingly urged in these difficult times to diversify their sources of support, then state officials are going to have to realize that institutional administrators and faculty will, of necessity, be responsive to a wider set of incentives and concerns.

Similarly, federal officials need to hear that the amount of federal regulatory intrusion is becoming, at least on some campuses, totally disproportionate to the relative importance of the funding that the federal government provides.

It is crucial that we continue to explore these issues and all the issues of effectiveness, efficiency, and productivity that have been on our agenda. We must do so for at least three reasons. First, we are clearly in a period when resources are limited. We have to make sure that we get the most out of those resources that will be available to higher education in the 1990s.

Second, we must reassure a public that has become increasingly skeptical of our enterprise and uncertain about whether the benefits of higher education are worth the costs.

Finally, we must do everything we can to encourage a climate that is supportive of higher education so that additional resources, which will be necessary to educate an increasingly diverse population to the high standards required by the economic and social challenges of the 1990s and beyond, will be forthcoming.

On behalf of OERI, NACUBO, and The College Board, I thank you all for your willingness to join us here and to continue this important discussion.

Biographies

Richard E. Anderson

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Richard Anderson has been vice chancellor for administration and finance at Washington University in St. Louis since 1990. Before moving to St. Louis, Anderson was chair of and a professor in the Department of Higher and Adult Education at Teachers College, Columbia University and director of the Center for Postsecondary Governance and Finance. Anderson was a founding member and had been a codirector of the center since its inception in 1985.

Anderson, who has written extensively on financing issues in higher education, co-edited two books published in 1990: *Financial Planning Under Economic Uncertainty* and *Financing Higher Education in a Global Economy*. He published *Capital Ideas*, a quarterly journal on college financing, from 1985 through 1990.

Anderson holds an M.B.A. and a Ph.D. from Columbia University; he has been a lecturer at a number of meetings and workshops of high-level college and university business administrators. Most recently, he discussed the problems of financing higher education in the 1990s at workshops sponsored by the National Association of College and University Business Officers. He also oversaw the Forum for College Financing.

George A. Brakeley, Jr.

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A fund-raising consultant for over 50 years, George Brakeley has been associated with many colleges and universities in the U.S., Canada, and abroad, the Smithsonian Institution, the U.S. Chamber of Commerce, and the Washington Cathedral, in addition to a variety of other clients. He has become a well-known expert in the field of fund raising for higher education, having counseled academic institutions in securing more than $10 billion in contributions.

Brakeley is the author of *Tested Ways to Successful Fund Raising* and is a trustee of The Center for the Study of the Presidency and the International Council for Coordinating Cancer Research.

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Christopher Cross has been head of the Department of Education's Office of Educational Research and Improvement (OERI) since his appointment by President George Bush in 1989. He began his career in government in 1969, when he was named deputy assistant secretary for legislation in the Office of the Secretary at the Department of Health, Education, and Welfare. He advocated the creation of the National Institute of Education (NIE), the organizational forerunner of OERI.

From 1972 to 1976, Cross was senior education consultant and Republican staff director for the House Committee on Education and Labor. Over the years, Cross's work has included consulting for the National Center for Educational Statistics on school finance issues and acting as chair of OERI's Laboratory Review Panel. In his present position, Cross is responsible for research, data gathering, and education improvement activities.

Cross holds a B.A. in political science from Whittier College and a master's degree in government from California State University, Los Angeles.

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Carol Frances, a specialist in the economics and finance of higher education, works with Washington-based education associations, individual colleges and universities, businesses, and government agencies. She is economic and program advisor to the Association of Urban Universities and a partner in Performance, a firm specializing in strategic planning. Frances was a coauthor of a best-selling handbook published by the Association of Governing Boards titled *Strategic Decision-Making for College and University Trustees: Key Issues and Indicators.*

Frances has just published a report titled *What Factors Affect College Tuition: A Guide*

to the Facts and Issues. She is working with K. Scott Hughes on two monographs to be published by the National Association of College and University Business Officers: *The Impact of Demographic Trends on Higher Education in the 1990s* and *The Impact of Work Force Trends on Higher Education in the 1990s*.

Frances holds undergraduate degrees from UCLA, Stanford University, and the Institute d'Etudes Politiques, and graduate degrees from Yale and Duke universities.

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Jeffrey Gilmore is a research associate in the U.S. Department of Education's Office of Educational Research and Improvement (OERI). He has had more than 15 years of experience in higher education as a college administrator and researcher. In OERI's Office of Research, Gilmore is responsible for postsecondary education research centers, grants, and contracts.

Gilmore has earned graduate degrees in college student personnel services and public administration, and he received a Ph.D. in higher education from Penn State. He is the author of several publications on higher education administration, finance, and policy.

Janet S. Hansen
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Washington, DC

Janet Hansen is the director for policy analysis in the Washington, D.C. office of The College Board. She is the author of numerous articles and studies on postsecondary education finance, including federal and state government support of higher education, student financial aid programs, alternative financing options, and the implications of rising student debt levels.

Hansen was assistant dean of the College at Princeton University from 1970 to 1975. She then moved to the Claremont Colleges in California, where she was director of the Center for Continuing Education and served as associate provost. Hansen has been with The College Board since December 1977.

Hansen is a graduate of the University of North Carolina at Chapel Hill and holds a Ph.D. from the Woodrow Wilson School of Public and International Affairs at Princeton University.

Caspa L. Harris, Jr.
President
National Association of College and University Business Officers
Washington, DC

Caspa Harris has been president of the National Association of College and University Business Officers (NACUBO) since July 1987. Before heading the association, he was vice president for business and fiscal affairs and treasurer at Howard University, a position he had held since 1971.

Long active in a wide variety of professional associations, Harris is past chair of NACUBO and a past president of the Eastern Association of College and University Business Officers. He is a popular speaker at national seminars and meetings on legal and accounting issues and federal affairs.

A licensed certified public accountant, Harris is a graduate of The American University, where he received a B.S. in accounting and a J.D. in law.

Patrick J. Hennigan

Vice President
Public Finance Investment Banking
J.P. Morgan Securities Inc.
New York, NY

Patrick Hennigan joined the Public Finance Department of J.P. Morgan in 1982; he specializes in assessing the debt capacity of colleges and universities, advising them on rating agency strategies, and assisting them in structuring long-term and short-term financings. Hennigan was named the top college and university analyst on Wall Street in Global Guaranty's survey of institutional investors in 1990. Hennigan recently has served as senior banker on long-term transactions for Cornell University, the Regents of the University of California, Columbia University, and the State University of New York.

Prior to joining J.P. Morgan, Hennigan was an assistant professor in the School of International and Public Affairs at Columbia University and taught at the University of Virginia. He earned a Ph.D. in public administration from the Maxwell School of Citizenship and Public Affairs at Syracuse University.

K. Scott Hughes

Principal
KPMG Peat Marwick
San Francisco, CA

As a principal in the San Francisco office of KPMG Peat Marwick, K. Scott Hughes is a policy analyst and advisor on strategic services to postsecondary education clients. He directs Peat Marwick's Western Region Management Consulting practice for Education and Other Institutions. Hughes advises higher education governing boards, presidents, and chancellors on the environmental and public policy issues affecting academic institutions. He assists in formulating and implementing strategies and programs to enable institutions to be academically competitive and financially viable through the 1990s.

Hughes assists such national organizations as the Association of Governing Boards and the National Association of College and University Business Officers in developing programs and services aimed at reinforcing the management and financial strength of academic institutions.

Hughes has written extensively; his most recent publication is *Managing Change in Higher Education: Preparing for the Twenty-First Century*. He is currently working with Carol Frances on two monographs to be published by NACUBO: *The Impact of Demographic Trends on Higher Education in the 1990s* and *The Impact of Work Force Trends on Higher Education in the 1990s*.

Senator James M. Jeffords of Vermont

United States Senate
Washington, DC

Before being elected to the Senate in 1988, Senator James M. Jeffords was the ranking Republican member of the House of Representatives' Education and Labor Committee. Now a member of the Senate's Labor and Human Resources Committee, Senator Jeffords is a ranking member of its Labor Subcommittee. He is also a member of the Senate Subcommittee on Education, Arts, and Humanities, the Senate's Environment and Public Works Committee, and the Committee on Veterans Affairs.

Senator Jeffords was Vermont attorney general before coming to Washington. He is a graduate of Yale University, and received an LL.B. from Harvard Law School in 1962.

Richard T. Jerue

Counsel, Subcommittee on Labor-Management Relations
Committee on Education and Labor
U.S. House of Representatives
Washington, DC

Richard Jerue became counsel to the House Subcommittee on Labor-Management Relations this month, having served as staff director of the House Subcommittee on Postsecondary Education since 1988. Jerue's involvement with federal policy making in higher education dates to 1976, when he was appointed associate counsel to the Senate Subcommittee on Education, Arts, and Humanities. After serving as minority counsel to this subcommittee, he became staff director of the National Commission on

Student Financial Assistance in 1981. Jerue then was appointed vice president for governmental relations at the American Association of State Colleges and Universities in 1983, where he served until returning to Capitol Hill in 1988.

Jerue received a J.D. from Suffolk University School of Law in 1977.

Rita J. Kirshstein
Senior Analyst
Pelavin Associates, Inc.
Washington, DC

Rita J. Kirshstein is a senior analyst at Pelavin Associates, Inc.; she recently completed a congressionally mandated study, *The Escalating Costs of Higher Education*, for the U.S. Department of Education. Kirshstein has written on a number of other postsecondary education topics, including the impact of student financial aid on college persistence, issues in student loan defaults, faculty utilization, and postsecondary education programs for disadvantaged students. Kirshstein has been both a student and professor in public and private universities.

Charles E.M. Kolb
Deputy Assistant to the President for Domestic Policy
The White House
Washington, DC

Before joining the White House staff in 1990, Charles Kolb was deputy under secretary for planning, budget, and evaluation at the U.S. Department of Education. Prior to this appointment, he served as deputy general counsel for regulations and legislation at the Department of Education, and assistant general counsel at the Office of Management and Budget.

Before joining the federal government in 1983, Kolb was in private practice with

the Washington, D.C. law firms of Covington & Burling and Foreman & Dyess.

Kolb is a graduate of Princeton University and has a master's degree in philosophy, politics, and economics from Balliol College, Oxford University. He received his law degree from the University of Virginia.

David A. Longanecker
Executive Director
Colorado Commission on Higher Education
Denver, CO

As executive director of the Colorado Commission on Higher Education since 1988, David Longanecker also serves as executive director of Colorado's Department of Higher Education and as an officer in the Governor's cabinet. He is president-elect of the State Higher Education Executive Officers Association. Prior to accepting the positions in Colorado, Longanecker served as executive director of the Minnesota Higher Education Coordinating Board for four years. He worked for the Congressional Budget Office in Washington, D.C. from 1977 to 1981.

Longanecker currently serves on the advisory panel for the U.S. Department of Education's National Postsecondary Student Aid Study and on the American Council of Education's Commission on Educational Credit and Credentials.

Longanecker received a doctorate of education in administration and policy analysis in higher education from Stanford University; he holds a master's degree in student personnel work from The George Washington University.

Roger D. Lowe
Vice President for Administration and Finance
Wichita State University
Wichita, KS

Roger Lowe is vice president for administration and finance at Wichita State University and has been in higher education for over 29 years. He has served as president of the National Association of College and University Business Officers (NACUBO) and the Central Association of College and University Business Officers; he won the Distinguished Business Officer Award from NACUBO in 1988.

Lowe is completing his fifth year as chair of the NACUBO/USX Cost Reduction Incentive Awards Committee. He is a certified public accountant.

William F. Massy
Director
Stanford Institute for Higher Education Research
Stanford University
Stanford, CA

In addition to being director of the Stanford Institute for Higher Education Research, William Massy is the chief financial officer and professor of education and business administration at Stanford University. He also heads the Higher Education Program in Administration and Policy Analysis at the Stanford School of Education.

Massy has been an author or coauthor of seven books and approximately 50 journal articles. His books include *Planning Models for Colleges and Universities; Market Segmentation; An Econometric Approach to a Marketing Decision Model;* and *Stochastic Models of Buying Behavior.*

James R. Mingle
Executive Director
State Higher Education Executive Officers
Denver, CO

James Mingle was appointed as the first executive director of the State Higher Education Executive Officers (SHEEO) in 1984. SHEEO represents the executive officers and staffs of the statewide coordinating and governing boards of the 50 states.

Mingle has worked with the issues of minority access, statewide planning, coordination and governance, program review and assessment, and institutional management. In 1976, he was coauthor of the first study to examine the impact of increased minority enrollment on predominantly white institutions in the 1960s (published by the Institute for Social Research at the University of Michigan). From 1980 to 1982, Mingle directed a national study of state and institutional strategies to deal with enrollment decline and financial cutbacks. More recently, he has turned his attention to the problems of accountability and productivity in higher education.

Mingle completed a Ph.D. at the Center for the Study of Higher Education at the University of Michigan and his bachelor's and master's degrees at the University of Akron in Ohio, where he also served in administrative positions in the areas of continuing education and admissions.

Frederick A. Rogers
Vice President for Finance and Treasurer
Cornell University
Ithaca, NY

As the vice president for finance and treasurer at Cornell University, Frederick Rogers' responsibilities include policy and operations in financial and business affairs, in addition to participation in development of overall university policy and resource allocation decisions. Prior to his appointment to Cornell in July 1990, Rogers was at Carnegie Mellon University for 16 years, most recently as vice president for business affairs before his departure. During his tenure at CMU, Rogers served as chief financial officer and director of planning and administrative systems, and had a nine-month appointment, while on leave from the university, as executive assistant to the secretary of labor and industry of the Commonwealth of Pennsylvania.

Rogers is the current chair of the National Association of College and University Business Officers' (NACUBO) Financial Management Committee. He also has served on the Eastern Association of College and University Business Officers' Board of Directors and has taught extensively in the NACUBO Professional Development Program. Rogers is currently a trustee of Beirut University College in Lebanon. In the private sector, Rogers is a director of the Wheeling Pittsburgh Steel Corporation.

Rogers received a B.A. in mathematics from Carleton College in 1972 and an M.S. in urban and public affairs from Carnegie Mellon in 1974.

Robert M. Rosenzweig

President
Association of American Universities
Washington, DC

Robert Rosenzweig has been president of the Association of American Universities (AAU) since 1983. Before taking the helm of AAU, he was vice president for public affairs at Stanford University. In his 21 years of service at Stanford, Rosenzweig also served as advisor to the president, director of the Center for Research in International Studies, and associate dean of the university's graduate division.

Rosenzweig, who holds a Ph.D. in political science from Yale University, was an official with the U.S. Office of Education, where he was a member of the National Defense Graduate Fellows Program and special assistant to the commissioner of education.

The author of *Research Universities and Their Patrons* and *The Federal Interest in Higher Education*, Rosenzweig was cited by *Business Week* in 1989 as one of 12 key policy makers in American science and technology.

Sean C. Rush
Partner
Management Consulting Service
Coopers & Lybrand
Boston, MA

Sean Rush is a partner in Coopers & Lybrand's higher education consulting practice. He has more than 16 years of administrative, consulting, and policy-level experience with colleges and universities, state government, health care institutions, and service sector companies. A frequent speaker at professional seminars and meetings for higher education organizations, Rush also is a member of the Massachusetts Public Health Council.

Rush is a graduate of Boston College, from where he also holds an M.B.A.

Michael L. Tierney
Associate Dean
Graduate School of Education
University of Pennsylvania
Philadelphia, PA

As part of a national study of corporate-sponsored education and training, Michael Tierney pioneered the use of the U.S. Census' Current Population Survey to analyze corporate training programs. His work, covering a 15-year period, identified trends in participant involvement in terms of their gender and ethnicity as well as their education and age. He intends to continue this line of research as a senior scholar for the National Center on the Educational Quality of the Workforce.

Tierney serves as associate dean of the Graduate School of Education and associate director of the Institute for Research on Higher Education at the University of Pennsylvania. As associate director of the institute, Tierney was responsible for the management of The College Board's Enrollment Planning Service; he has conducted extensive research on student financial aid. As associate dean, Tierney is responsible

for the planning and management of the Graduate School of Education. His particular areas of responsibility include the development of the school's strategic plan, the preparation of its financial plan, and oversight of the day-to-day operations of business and student services.

Frederick J. Turk

National Director for Services to Higher Education
KPMG Peat Marwick
New York, NY

As KPMG Peat Marwick's national director for services to higher education, Frederick Turk is responsible for directing the firm's accounting, auditing, consulting, and tax services to colleges and universities. In that capacity, has worked with more than 700 institutions of higher education in the U.S. He has consulted with colleges and universities for over 20 years concerning organizational restructuring, strategic planning, management information systems, and other areas of financial management.

Turk is on the faculty of the College Business Management Institute of the University of Kentucky, where he teaches a course in fundamentals of fund accounting, and is a member of the Central Association of College and University Business Officers' Summer Management Institute at the University of Wisconsin, where he teaches courses on financial reporting and financial analysis.

Michael H. Walsh

Chairman and Chief Executive Officer
Union Pacific Railroad
Omaha, NE

Michael Walsh is chair and chief executive officer of Union Pacific Railroad; he has headed the Omaha-based company since October 1986. Before joining Union Pacific, Walsh was with Cummins Engine Company, Inc. where he served as executive vice

president and general manager of its Worldwide Engine and Components Businesses. He also was a member of the Cummins board of directors.

Walsh is director of FirsTier Financial, a multibank holding company based in Omaha, and Fleming Companies, a wholesale food distributor that is headquartered in Oklahoma City. He also serves on the board of trustees of Stanford University and the board of directors of Creighton University.

Walsh holds a bachelor's degree in economics from Stanford University and an LL.B. from Yale University's law school. Between college and law school he was one of the first group of White House Fellows. In that capacity, he was special assistant to Secretary of Agriculture Orville Freeman. He later practiced law in various public and private capacities before being named U.S. Attorney for the Southern District of California in 1977.

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